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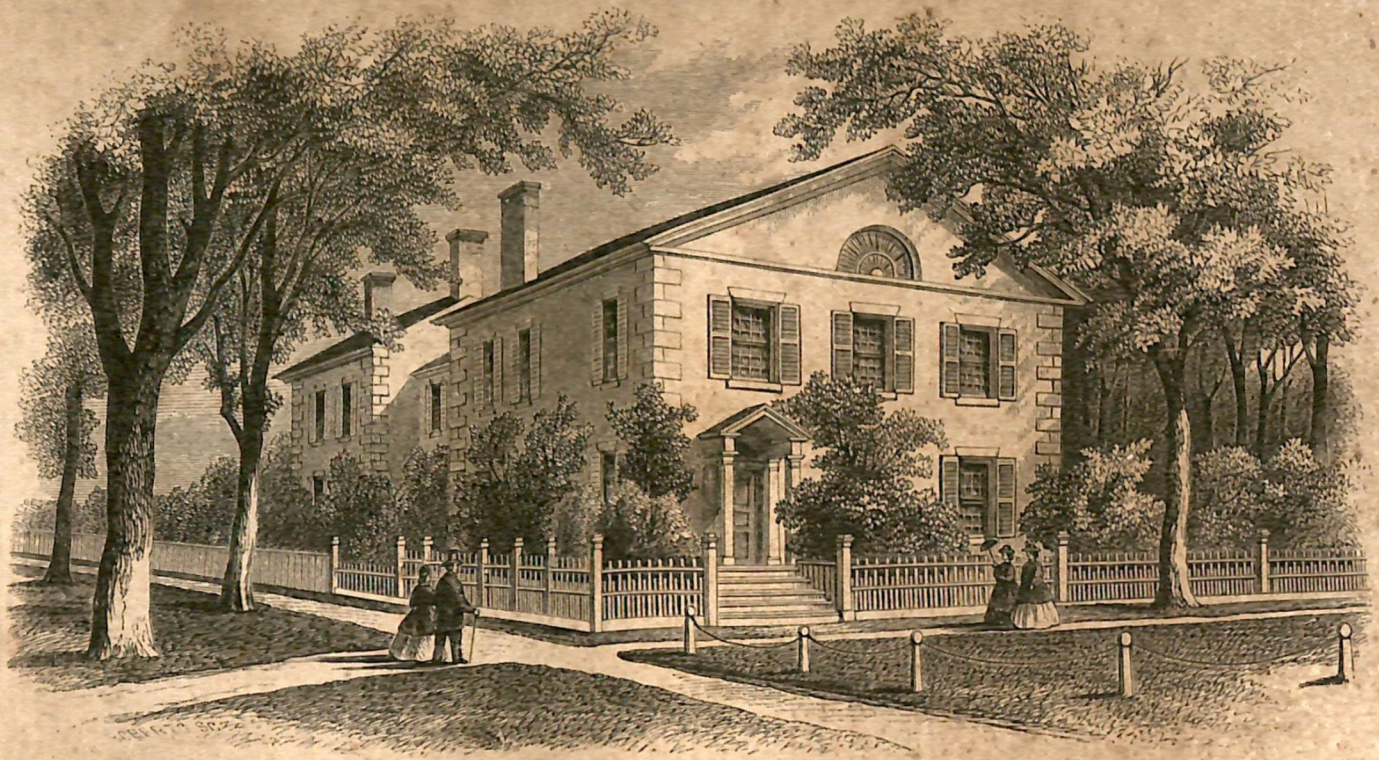

THE RESIDENCE OF PROFESSOR SILLIMAN.

LIFE

OF

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BENJAMIN SILLIMAN, M.D., LL.D.

LATE PROFESSOR OF CHEMISTRY, MINERALOGY, AND GEOLOGY IN YALE COLLEGE.

CHIEFLY FROM HIS MANUSCRIPT REMINISCENCES, DIARIES, AND CORRESPONDENCE.

XX.Q.42

BY

GEORGE P. FISHER,

PROFESSOR IN YALE COLLEGE.

IN TWO VOLUMES.

VOLUME II.

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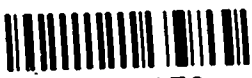

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Professor Silliman continues the narrative of his public labors: —

I had now been nine years before the public as a lecturer on science, to popular audiences, and had been successful in making the subjects on which I had spoken intelligible and attractive, without diminishing the dignity of science or neglecting Yale College. With the exception of a single spontaneous address before the Geological Association in Philadelphia, in the spring of 1841, when I presided, my efforts had been mostly confined to New England, — chiefly to Massachusetts and the city of New York. By these and similar labors of other gentlemen, both of earlier and coincident periods, a strong impression had been produced on the public mind, and overtures were made from time

to time for scientific lectures in other places. Among them the City of Pittsburg offered strong claims, which were presented by W. W. Wilson, Esq., in a correspondence on behalf of his fellow-citizens. I felt myself drawn that way by the interesting historical associations, and the rich geological and picturesque features of that grand region. No definite pecuniary offer was made. I was to take my chance of success; and, presuming that the lectures would pay the expenses of the journey, I gave an affirmative answer to the proposal of Mr. Wilson. . . . . It was a source of satisfaction to my good wife and my children, as well as to myself, that I was not to travel alone. My kind friend, Mr. Robert Bakewell, the skilful artist, to whom I had been long indebted for many most useful as well as beautiful drawings, illustrative of geology, was willing to accompany me to Pittsburg, to which he was drawn by his brother * and his family, who had made that city their temporary home. Mr. William L. Kingsley, also, youngest son of my friend and colleague, Professor James L. Kingsley, decided to accompany us over the mountains on his way to the River Ohio.

Mr. Silliman proceeded to Washington, by the way of Philadelphia and Baltimore, and thence to Pittsburg.

I find the following in a rough sketch of part of the course, under date of Saturday, May 6:—"My second week concluded with great mercy. I am well, and have sustained my anxious, but now successful labor. Great interest is excited; the regular attendance is about six hundred; people go an hour or more beforehand, and, although the lectures are from an hour and a quarter to an hour and three quarters long, they listen patiently, and are very decorous, and as attentive as ever. Three lectures more, and my work will be done. . . . . .

* The Rev. William L. Bakewell.

May 11. — This evening my course was finished, and I touched the polemical question more to my own satisfaction than at any time before. I gave full scope to time precedent to man, but omitted any discussion of the days. . . . . At the conclusion, many persons pressed forward towards me, and almost overwhelmed me with their affectionate adieu, with their warm expression of approbation, and their best wishes for my welfare. Many ladies came to bid me farewell, and manifested strong emotion as they shook me warmly by the hand. I was quite unmanned by such expressions of grateful feeling, and wanted words adequately to respond. I never ended any course of lectures with such vivid demonstrations of kind and gratified feelings. The gentlemen attending the course were not wanting in similar demonstrations; and that evening has ever remained a bright spot in my reminiscences of life.

May 27, *Saturday.* — We arrived at our dear home to dinner; and, to our great joy, we found all well, especially the beloved lady, and rejoicing in our safe return, and grateful that, by the goodness of God, my tour of fifteen hundred miles and forty-four days, by land and water, had terminated prosperously, — without accident, or hindrance, or molestation. In my numerous journeys already made, and in other travels and labors that remain to be recorded, I ever committed my dear wife and family, myself and my companions in travel, devoutly to the care of a kind, protecting Providence, and never did I fail to experience it in every vicissitude. Certainly I was not indifferent to the acquisition of means for the education of my children, and for their outfit in life, as well as to fulfil all my other pecuniary obligations; but I can truly say that it was my delight to honor God by unfolding, in the most lucid form of which I was capable, the wonderful illustrations of His power, wisdom, and goodness, which science reveals; and no departments of science are more rich in such proofs than those

which it was my duty to explain. Astronomy stands side by side with them in these respects; while, in grandeur and awful sublimity, as it presents in the starry heavens a splendid record of the thoughts of God, it takes rank of all other departments of physical science.

Excepting a single spontaneous address before the Geological Association in Philadelphia, in April, 1841, I had never spoken, as a lecturer, in any place south of New York, except when I was in Baltimore. On my tour to Pittsburg in April, 1843, my good friend, Dr. Nathan R. Smith, expressed a wish that I might lecture in Baltimore, and intimated that he might originate an effort to have me invited to address an audience in that city in the ensuing year. To this suggestion I did not raise any objection, and the effort was made by Dr. Smith and his friends, and especially his son-in-law, Dr. Theobald, in the winter of 1843–44. Accordingly, in December, 1843, I received an earnest invitation from Baltimore to deliver a course of geological lectures there. The letter was couched in courteous language and in gratifying terms, and was signed by seventeen of the most eminent citizens. Several of these gentlemen were distinguished as men of science or for professional eminence, and most of them by social position.

The course in Baltimore was opened on the 4th of March, 1844.

My residence was, by previous invitation, at the house of Dr. Nathan R. Smith, the most celebrated surgeon of this part of the United States. Dr. Smith and his father and family had been guests in my house, and they appeared, I doubt not truly, to be happy in reciprocating the hospitality.

As at Pittsburg, I opened the entire subject, — the object of Geology, the means and the results already attained; also, the relation of the subject to the interests of

human society, both moral and physical. These topics, with some aid from the charts, enabled me to speak with freedom and evident effect. If I may judge from the notices in the Baltimore prints, the first impression was very favorable. "A large and highly respectable audience greeted the distinguished Northern Professor at his introductory lecture. His high reputation rendered it no easy task to meet the expectations of such an auditory; but they were more than realized. The discourse was so philosophical, yet so perspicuous and intelligible; the style so unaffected, so easy, graceful, and impressive, as to rivet the attention to the very moment of the conclusion. The lecture was, moreover, illustrated by a large collection of exceedingly beautiful and instructive paintings, which added greatly to the interest of every topic. "He dwelt on the physical history of the earth as it is indelibly written in the rocks; on the means of inspecting the interior of the globe, and of inferring its structure far below the visible surface; the changes wrought by physical laws, from one epoch to another, having fitted the earth first for the least perfect of beings, then for those of a higher order, and finally, after ages have passed, it became a fit abode for man." Another writer says: — "The discourse last night was of surpassing eloquence and interest, and clearly demonstrated that the study of Nature tends to impress us with suitable ideas of the power and attributes of the Creator. Who did not feel a thrilling sensation as the lecturer elucidated with such simplicity the remote and proximate causes of earthquakes and volcanoes?" I have condensed and softened these citations, omitting the most eulogistic parts. . . . . .

The success of the course was early decided. In a letter home, dated March 10, after lecture fourth, I remark: — "I am very well, and all anxiety as to the respectable progress of the lectures is over. People who come for once, *stay*. A lady came to oblige her husband, but was sure

she should neither understand nor care for the subject, but found that she was under a mistake in both these respects, and remained, an engaged and excited hearer.

March 10. — I wrote to my son: — "There is now an intense interest, and they talk of calling me another year. The audience, as I have before remarked, is of a high order of intelligence and social position, of the most perfect good breeding, and during the lectures there is a breathless attention.

"I spoke last night two hours to the fullest audience I have yet had, — believed to be six hundred, and I am treated with the greatest consideration. Mr. Gilmer is highly delighted, and says to me, that he cannot anyhow lose a lecture."

Richard Caton, Esq., an Englishman, married a daughter of the Hon. Charles Carroll, who was the last survivor of the men who signed the Declaration of Independence. I had met Mr. Caton in New Haven, and he had been very courteous to me in Baltimore; had called on me repeatedly at Dr. Smith's, although eighty years of age. He always came on horseback, and generally on Sunday noon. I dined in his family at the Carroll House, and Mrs. Caton, being quite blind, was assigned to my care, my seat being next to her at table; and I had the honor of leading her in and out, and enjoyed her sensible and enlightened conversation, her mind being in full vigor. The family are Catholics. Two of the sisters married English noblemen; one is the wife of the Marquis of Wellesley, brother of the Duke of Wellington, and another of a nobleman whose name I have forgotten. Mrs. Caton told me that the house or castle of her sister's husband was constantly thronged with visitors, who enjoyed the liberty of the house in the highest degree, coming and going as they please, — the Marquis not being responsible to entertain them, but only seeing them once or twice in a day. Mr. Caton was a gentleman of courtly manners, but visionary in his scientific views.

During the delivery of this course in Baltimore, Mr. Silliman was the recipient of the most cordial attentions and civilities.

In February, 1846, on the invitation of a considerable number of gentlemen, he again repaired to Baltimore, and gave a second course on the same subject. But owing to various causes, one of which was the neglect on the part of these persons to make the necessary preparations for the lectures, the attendance was smaller. Yet the lectures were heard with delight. During his stay in Baltimore, he made an excursion to Washington. This, as well as a dinner-party at Baltimore, — one of many social entertainments at which he was a guest, — are mentioned in the passages which follow: —

In Washington, Sabbath, February 5. I was at the Presbyterian Church, with Mr. and Mrs. B.; — a fervent and powerful sermon by Mr. Sproal. President Polk and lady were near us, with many members of the government. The President and lady were sedate and dignified. I conversed with him at New Haven several years ago. He was, in his manners, a gentleman, and she a polished lady. Sometime after, with some lady friends, I had an introduction to her at the White House on reception day.

March 6.—Dinner at Mr. Samuel Smith's, near the Battle Monument, — a dinner of style and splendor. Among the guests were Mr. Frank Granger and Monsieur Bonaparte, son of Jerome Bonaparte, and his wife, Miss Patterson, of Baltimore. He was born in London, in the summer of 1805, when I was residing there. He is an unassuming gentleman, and in person and features is pronounced to be the very image of his uncle, Napoleon I. He leads a quiet life, — amusing himself with riding and other active occupations.

The reputation of Mr. Silliman as an attractive teacher of science had now, through his pupils and in consequence of his popular courses, spread to the remotest parts of the country. The passages which follow are a part of his record of an extensive tour in the South, and of his successful labors in several of its principal cities.

A correspondence had been sustained between several personal friends and myself, founded on interviews here in New Haven, regarding courses of lectures to be delivered by me in the cities of Mobile and New Orleans. Much interest was manifested to have me undertake this tour, and preliminary investigations were made by my friends as to the patronage that might be expected, which, in their judgment, appeared to be sufficient to justify the undertaking. In Mobile, Mr. Milton Pope acted as my friend, and in New Orleans, Messrs. Lucius C. and Grier Duncan, brothers, and Alfred Hennen, Esq., were my most active supporters. In both cities there were Northern men, and several from Connecticut, who took an interest in the matter; and as I had never travelled in the far South and Southwest, I decided, after mature consideration, to make the effort, — my son going with me, both as a companion and assistant.

He took Charleston on his way, where he was hospitably received.

Sabbath, February 2. — A happy meeting with our New Haven friends, Professor C. U. Shepard and lady, cheered us on our arrival, and we resorted at once to their temporary home, at Miss Smith's, in Broad Street. We rested in the forenoon in our warm and comfortable chamber, and in the afternoon we resorted to a small free Episcopal Church, because its air was tempered by a stove. We were told that

the other churches were without fire, and I had a cold upon me. The service was solemn; and one gallery was filled by servants of all shades of color, from jet black to almost Anglo-Saxon white. They seemed very devout.

Among the friends whom I was happy to meet in this city was John Berwick Legare, Esq., a graduate of Yale College in 1815, a ward of mine. By kind treatment, I attached him to me, and I rendered him some personal services for which he was grateful. In 1839, he visited New Haven, with his wife and her sister, and they, with other Carolinians, were received in hospitality at our house. I was pleased there to meet them, the ladies being lovely women, and the sister, Miss Elizabeth Jones, was eminently lovely and beautiful. It was Mr. Legare who conducted us to church; and in the vestibule of his ancient family church, that of Dr. Post, the congregation being not yet assembled, I there met Miss Jones, who received me as an affectionate daughter would do. We had interchanged letters, and occasionally little *souvenirs* of kind remembrance passed between her and my good wife, as well as myself. Six years had passed since we parted at New Haven, and it was agreeable to me to find that I was still most kindly remembered. Two of Mr. Legare's brothers had been under my care, and his cousin, John Bassnett Legare, also. I was in correspondence with the heads of these families many years, and for all these reasons, and more, I was welcomed warmly.

February 3.— Mr. Legare took us in his carriage, and we rode until two P. M.,—five hours. We made the circuit of the city and its environs; we threaded it through and through in various directions. It is a fine old city, containing many grand families, especially of the last age,—the Pinckneys, the Rutledges, the Grimkes, and others: everything, however, wears a sombre aspect, partly the effect of climate; but the people remark that the prosperity of the place appears to be on a decline,—still it has a pleasing appearance.

A dinner at the Charleston Hotel, by invitation of Rev. George Shepard, gave us pleasant interviews with him and his lady, and a pleasing circle of friends, — Judge Gilchrist and lady, Bishop Gadsden, Rev. Mr. Hinckel and lady, and my friend, Miss Elizabeth Jones, and a sister who had high conversational powers. This hotel was the home of Judge Hoar and his daughter, when a few weeks before they were so inhospitably expelled from Charleston.

Our friends, the Shepards, invited a large circle of their friends, — one hundred, as was said, to meet us at their lodgings. Those whom we had lately met at dinner were there, and many other persons of distinction. All were very agreeable, and gave us a warm reception; and we were most favorably impressed by their kind and agreeable manners. . . . . .

Colonel Ion, a most respectable gentleman, was a graduate in the class of 1803 in Yale College, which I instructed as a tutor, having, according to the practice of that day, the entire charge of them in all their studies. His conduct was very manly, his attainments highly respectable, and his deportment towards myself perfectly respectful and gentlemanly; so that a friendly feeling was mutually cherished. Hearing that I was expected, he had arranged to meet me with his carriage on my arrival in the boat; but our coming on Sabbath morning prevented the execution of his purpose to take us to his house as his guests. At his house, on the occasion of a dinner to which we were invited, we met a most friendly reception. Colonel Ion being a bachelor, his sister Mrs. Wrag and her daughter or daughters did the honors of his house. They, with Colonel Ion, had been hospitably entertained at our house in New Haven, so that this meeting seemed as a reward of our previous friendly relations. Colonel Ion had a command in the army during the late war with England, and was long Speaker of the House of Representatives of South Carolina, and was still distinguished for his early traits of candor, impartiality, and

kindness. Sitting at table between Miss Wrag and her mother, the young lady asked me to give her my candid opinion of Slavery, which I did in kind but ingenuous terms, saying at the same time that I should never have alluded to it but for her request. She made no reply, but her countenance fell. . . . . .

In the family of Mr. John Bowman, the late father of Miss Lynch Bowman, my brother Gold S. Silliman, soon after our leaving Yale College in 1796 — *i. e.* in 1797 and '98 — was engaged as a family instructor, and remained with them nearly two years. His pupils were three daughters and a son, who with the parents and a maiden aunt, constituted the family. They all treated him most kindly, and, in a dangerous sickness of yellow fever, affectionately. The family passed a part of the summer of 1802 in New Haven, when I was tutor in Yale College, and my brother, then in Providence, R. I., consigned them to my care, which was rather embarrassing, as I had no family to show them civilities; but I was very attentive to them, and the more so as Mr. Bowman was not with them until late in the season. The older ladies were most respectable matrons — the son and older sister eccentric and peculiar, — (she was afterwards Mrs. Bishop Gadsden). The youngest sister, of fifteen or sixteen, was pretty and amiable; but Miss Lynch Bowman, of the age of eighteen, was the flower of the family. She was a most beautiful and lovely woman, with a winning grace in her manners which conciliated every one, and quite charmed me, then twenty-two years old. Her kindness (they were, as I have said, placed under my care,) repaid me for my devotion to the family, and I parted from them with regret, as I never expected to see any of them again. On making inquiry, however, in Charleston when I arrived there, I was pleased to learn that the lady was living and well, and was very highly esteemed. I sought her residence, and sent in my card and waited at the door; the response came quickly. I was

admitted, remembered and welcomed. Recognized I could not expect to be after a separation of forty-three years, — I having attained to sixty-six years, and she, as I judged, having just turned threescore. I found her still a handsome woman of noble mien. Age did not tell upon her features; but there was a pensiveness of manner which told of sorrows past. All the members of her family were dead, except the eccentric brother, who had married below his rank, and was living in Louisiana, odd as ever, and the gentle young Mary, now an old and infirm lady. Miss Lynch Bowman retained one trait unchanged by time. She had preserved her musical, mellifluous voice to which forty-three years ago I was delighted to listen. When I remarked that doubtless she would not have recognized me, she replied that had she been told that I was in a particular circle of gentlemen, she thought she could have picked me out. . . . . She inquired after my brother, Gold S. Silliman, her early teacher, and said she would have seen him last summer when she was in New York, on the way to Boston, had she known his residence. She left the room for a few moments, doubtless to order tea, but I was obliged to decline. She expressed a wish to see my son, and it was my intention to renew my call, and to see her again on my return from New Orleans in the Spring; but this design was frustrated by our ascending the Mississippi. I greatly regretted the change, as my renewed acquaintance with Miss Bowman was confined to a brief interview.

He attended a party, composed of leading gentlemen of the city, at the house of Dr. Samuel H. Dickson, a graduate of Yale College, in the class of 1814. From Mr. Legare's family, whose home "was a model of taste, order, and beauty," he received gratifying manifestations of regard; and he carried away pleasant impressions of Charleston society.

Our visit in this celebrated city had been most agreeable. Our friends, the Shepards, had treated us with all possible kindness, and we had met similar treatment from all with whom we were conversant. Of their peculiar institution I thought not more favorably from seeing it more intimately, and it was no very pleasant comment upon it that a strong guard-house was maintained next to the house where we lodged. Here a corps of armed men are always found with weapons in their hands. At night a sentinel in St. Michael's tower, near by, is ready to give the alarm, and caparisoned horses are waiting for riders to vault into the saddle the moment the bell strikes; and thus the messenger flies to the suspected place, and returns with the tidings. All this passes under the name of the city police, but it has servile insurrection for its immediate object.

Remarks. — *April* 29, 1861. — I have sketched the state of society in Charleston as we saw it sixteen years ago, before it was demoralized by agitations on slavery and the subjects with which it is connected. It is pleasant to me to look at the picture as it then appeared, and it is but justice to view the favorable side, although it is now painfully reversed.

From Charleston he proceeded to a city which has since become more famous.

Montgomery stands on a bluff of land at the head of steam navigation on the Alabama River. The morning showed all the trees white as snow, — being frosted by the night air. In 1845 it contained three thousand inhabitants, and the aspect of the place was agreeable, except the slave-market, so revolting to behold. In a walk, otherwise pleasant, on Monday morning, we saw a collection of slaves of both sexes and different ages, but chiefly young, in their best dress, standing to tempt purchasers. The same spectacle was exhibited in Charleston, and we saw it again in

New Orleans and Mobile, and, on another occasion, in Richmond. It appears to be no more thought of in the South than a market for horses, mules, or cattle. I thank God that my children have not been brought up under such influences.

Of his arrival and stay in New Orleans he thus speaks: —

When we arrived in the city, the first person whom we met, who was known to us was Sidney Johnson, of New Haven, who had been a tutor in Yale College, and was very friendly; but the Duncans were our chief reliance. When we entered the office of Lucius C. Duncan, Esq., he advanced promptly, and, taking one of my hands between both of his, with a warm pressure, he said: "Welcome, thrice welcome to New Orleans;" and both he and his brother, throughout our stay, proved themselves friends indeed. At the hotel several gentlemen called; and, in the evening, we met the Rev. Mr. Wheaton, formerly of Hartford, and that excellent gentleman, General Cocke, of Virginia, whom I had met twice at New Haven, — once in my own house, and elsewhere on occasions of religious anniversaries. Mr. Grier B. Duncan took us to see several public rooms; but all discussion was ended by the agreeable information that Mr. Lucius C. Duncan had obtained permission for us to occupy the First Presbyterian Church of the Rev. Dr. Scott. A very courteous letter from the trustees, through their secretary, announced their kind and liberal intentions, which were gratefully acknowledged by me.

The newspapers were enthusiastic in their praise of the lectures.

Notice of the Introductory Lecture from the "Picayune" of February 19. — Professor Silliman's introductory lecture was attended by one of the largest and most intelligent

audiences ever convened in this city, and they were thoroughly enchained by words of wisdom and truth. The Professor's manner is dignified and commanding in an eminent degree. His style is simple and impressive, and, without any affectation of oratory, he is truly eloquent. He insisted upon the development of the means of knowledge of the superficial and internal structure of the globe, and upon some of the more important uses of geological science, — upon the influences of physical conformation, in connection with moral and social causes, in producing national character and the distinctive qualities and pursuits of a people. He glanced at the coincidence of geology with Holy Writ and with the various phenomena of creation in the earth; and he promised more fully to illustrate the harmony of science with the statements of the inspired writers. We predict that these lectures will prove in a high degree instructive and interesting, and one of the most gratifying sources of popular entertainment. . . . . .

March 12, *Wednesday.* — The last lecture was given this evening to a good audience, considering the weather, which was rainy all day, as yesterday, and the clouds did not hold up until towards evening. I spoke one hour and three quarters to a most attentive audience, allowing a short pause at the end of an hour. At the close, my constant friend, Lucius C. Duncan, Esq., rose and moved a series of approbatory resolutions, prefaced and sustained by an extempore address, and I made a brief extempore reply. The resolutions were of course adopted. The concluding lecture had been carefully considered; and, being in good physical power, I made, I believe, a happy finishing impression.

From his notices of New Orleans society, a single paragraph is extracted:—

On our return from the visit to the battle-ground with Mr. Hennen, we dined with our friend Mr. Lucius C. Dun-

can, whose hospitality to us is large and free, and at his table we met Bishop Polk and lady, — she, a Devereux. She is of the North Carolina Devereuxs, and he a relative of President Polk. The party, including several gentlemen, was agreeable; the bishop and lady were affable and kind, and Mrs. Polk mentioned to me an amusing poetical epitaph which Archbishop Whately has written upon his geological friend Professor Buckland, then of the University of Oxford, and afterwards Dean of Westminster. Having been a diligent student of Professor Buckland's "Reliquiæ Diluvianæ," and of other writings of his, and having had some personal communications with him, I expressed a desire to see this effusion of Bishop Whately, a gentleman justly renowned for his truly Catholic religious character and publications; but I had never before heard of this extra-Episcopal effusion. Mrs. Polk was so kind as to say that she would send me a copy, — a promise which she remembered. It lies before me now. I never saw Dr. Buckland, although I have interchanged works, and occasionally letters, with him. He is represented to have been one of the most joyous of men, with inexhaustible kindness and wit, and social in a high degree. His faculties were in various ways subjected to too severe a pressure, especially after he became Dean of Westminster, and his mind broke down in 1850, six years before his death, when he was sixty-six years of age. He died in 1856.

"Bishop Polk and lady, whose home is at Thibodeauxville, one hundred and six miles down the river, are passing the winter in New Orleans, and I meet them at the houses of our friends. They do me the honor to attend my lectures; and Mrs. Polk, at the dinner at Mr. Duncan's, said to me that she did not see how the geological conclusion that the death of animals had preceded man, could be reconciled with the Scriptures, which said that "sin brought death into the world and all our woe." I replied that she was quoting Milton, and not the Bible; and that even

the poetical quotation referred to our race and not to animals, myriads of which were created, died, and were buried in the forming strata where we now find their remains, before man was called into being. Bishop Polk sustained my views, and his lady appeared to acquiesce."

In connection with his lectures in New Orleans, a circumstance occurred which gave him peculiar pleasure. Among his auditors was a young lady, who, in consequence of bereavement in her family, was suffering under depression of spirits, without the consolations of religion. His animated descriptions of Nature, with the religious reflections by which they were attended, gave a new tone to her feelings, and, at the same time, awakened a practical interest in religion. Becoming aware of this fact, and having an acquaintance with herself and her family, he endeavored to lead her in the right path. From the correspondence which ensued with this accomplished young person, brief extracts are here given. The first is from a letter of Mr. Silliman, written shortly after his departure from New Orleans.

On the Mississippi River, April 1, 1845. — "I am sure, dear Miss H——, you will pardon me while I wish gently to encourage those happy movements which I trust are divinely prompted, and that our heavenly Father is gently drawing you to Himself by the cords of love, and this may be a happy crisis, not to be safely neglected. The fears entertained by you are natural to a delicate and susceptible mind and a sensitive conscience; but they are allayed if we look at the invitation, — so earnest, so comprehensive and kind: 'Come unto me all ye that labor and are heavy laden, and I will give you rest.' 'Yea, come and buy wine and milk without money and without price.' In compli-

ance with this invitation, come as you are, fresh from the tenderness of recent affliction, and fresh from the movement of God's spirit in your heart. 'Do not wait to be perfect, nor even to be assured beyond a doubt; come, and your doubts will vanish. When you have united yourself to the followers of the Redeemer, you will find comfort in your decision, and grace to sustain you in a Christian course. The sweet influence of Christian affections will give an additional charm to a fine mind, and increased attractions to natural loveliness. Our merciful Redeemer is mild and gentle. He was indeed severe upon hypocrisy and self-righteousness, but gentle towards the humble and timid; a bruised reed He never breaks, nor will He quench the smoking flax. Take Him, therefore, at His word, and He will receive you, while no source of real happiness will be closed or abridged for the present life, and the bright reversion beyond the dark valley will be held in reserve for you. These mortal bodies will be superseded by new and glorious forms, — spiritual, incorruptible, and worthy to inhabit the celestial world. If I have any right to entertain the hopes which I recommend to you, I may be permitted to add, that they have produced no gloom or depression of energy in the duties of life, or cast discouraging shadows over a temper and temperament naturally cheerful and hopeful. In every vicissitude, I am encouraged and sustained by the revelations of the Bible; and my entire family, I trust, with good hopes are grouped within the Christian fold. Accept, I pray you, these few suggestions, prompted by an earnest desire to promote your happiness; and I trust I shall have the pleasure of hearing in due time, that, under the guidance of your excellent minister, you will have found your doubts removed, and yourself happy in the decision to walk with those who have chosen the good part that shall not be taken away from them. You will not hear from me again until I have seen the green hills of New England, now two thousand

five hundred miles from me. Till then, and at all times, believe me your very affectionate and faithful friend."

From the Reply of Miss H——. "Since I received your letter, expressing such affectionate solicitude for my welfare, I have had a long conversation with Dr. Hawks, and his kind convincing arguments, with yours, persuaded me of my duty; but still I hesitate to receive such a gift unworthily. I know you will blame my delay, my dear sir, but not more than I do myself. I cannot tell why it is that I so long to join myself to those who belong to our Saviour's supper, and yet shrink from it; but I look forward with an earnest hope that I may be fully prepared for the next communion. Dr. Hawks seems to be all we could look for or wish in a pastor, but still I cannot talk to him with the freedom I can write to you. You claim my first gratitude for exciting feelings which have added much to my happiness, and I trust that in time they will perfect it here and hereafter."

In a subsequent letter, under date of June 4, 1845, she writes: —

"Your visit here was gratifying to many, but I think to few more than to myself. I shall never forget the hope that your lectures opened to me of higher sources of enjoyment than any I had ever known. I saw you so cheerful and gay, and withal so devout whenever a serious thought could be introduced with reverence, that I began to feel how much of my life had been wasted on trifles to the neglect of higher privileges. You will be glad, my dear sir, and sympathize with me in the increased happiness I now feel, when I tell you that last Sabbath I joined the communicants. My mother, (mother-in-law,) and I went to the table together. Dr. Hawks interested himself very much in us, and his persuasive arguments dispelled all my doubts."

At the request of ladies who had attended his lectures, he sat for a full-length portrait, which was painted with skill by an English artist, Mr. Wilson.

On concluding his course, Mr. Silliman repaired to Mobile, where he also gave a series of lectures on geology, which were received with the favor that attended him throughout his Southern tour.

Returning to New Orleans, he ascended the Mississippi, stopping at Natchez, where he gave a brief geological course, and also at Rodney, about twenty miles above Natchez, the residence of Mr. John Murdock, a graduate of Yale College. He had the opportunity, in the company of this gentleman, to inspect one of his plantations.

April 8, *Tuesday.* — We went with Mr. Murdock to see one of his plantations, and to observe the culture of cotton and the management of the slaves, of whom there are here more than two hundred, but only one hundred of them are available for plantation work. We saw a woman holding a plough drawn by a pair of mules; she was covered by a long robe, but had a disconsolate look which is often visible in those who are of sufficient age to realize their condition. I observed the same fact among the domestic slaves * in my father's house. The adults were sometimes sorrowful or sullen, while the children were bright and playful. From my observations on slavery, which I have now seen in all the old Slave States,—that is, in all those in which it existed on a considerable scale, — I do not think more favorably of it than before. Many proprietors, however, treat their slaves with as much lenity as is consistent with coerced bondage, and Mr. Murdock appears to be a kind master. I am told that he himself solemnizes the marriages of his people,

* Slavery then, soon after the Revolution, existed in many families of New England; New York, and other States, from which it was early banished.

acting as priest as well as master. — We observed that they were using guano in the culture of cotton, and we understood, with advantage.

It is unnecessary to present further details of the work done by Mr. Silliman as a lecturer, in many other cities and towns. In 1852 he was called upon to deliver a geological course in the Smithsonian Institution, and complied with the request. In 1855, when he had reached the age of seventy-five, he reluctantly acceded to an earnest and reiterated request that he would lecture in St. Louis. He made the long journey and performed this duty, receiving marked attentions during his stay in that place. An incident occurred which served to prove that some theological enemies of geology still remained. Having mentioned that the hall originally provided was inconveniently large, he adds: —

There was another coincidence that was far from being agreeable, and the only discourtesy I ever met with as a geologist. An association of young men, — I believe the Christian Association, — occupied another lecture-room in the same building, and there Bishop ——— of ——— addressed them in anticipation of my course, and his first subject was "On the Assumptions of Geology." The Bishop said in his lecture that half the geologists were infidels, and the other half he pitied. A gentleman who heard him said that the lecture was crude, ignorant, and of course denunciatory. As my course had been for some time announced, he must have been aware of the fact, and I thought it was rude and uncandid to endeavor to give the public mind an unfavorable bias; and this conclusion seemed unavoidable, as his introductory lecture, containing his protest against geology, was given on the evening before my first lecture.

I afterwards met him at the house of Dr. Pope. We were introduced, but he, although a polite gentleman, addressed no remark to me, nor did I to him.

Mr. Silliman felt that the time had come for him to cease from these exciting efforts in public, which required a greater strength of voice than he could longer command. He adds to the record some interesting reflections.

March 1, 1862. — I may be allowed to record my own views of the spirit in which these labors were undertaken, and have been successfully performed. Of course the *first* requisite in a public speaker is that he himself understands the subject which he proposes to explain; the *second*, that a transparent perspicuity shall enable every intelligent and attentive hearer to comprehend his teachings; and a *third*, that a vivid animation should excite the speaker, and thus warm the hearer.

These traits will appear, if the speaker, being a person of competent mental power, has been happy in the choice of his subject, has studied it faithfully, and arranged it skilfully; and moreover, if he speaks under a strong conviction of the truth and importance of that which he propounds, — then perspicuity, truthfulness, and vivacity, will arrest and secure his audience.

These are the views by which I have been governed. It is not for me to say that I have reached the standard which I have proposed; but the successful results of the labors of twenty-three years, in communities widely different in mental culture and geographical position, justify me in saying that I have zealously put forth my best efforts.

I have been deeply impressed with the high responsibility of my position in the labors which I have performed. A responsibility, first, to the infinite Creator for the sincere and truthful investigation and exhibition of the laws of that

portion of His works which I took it upon me to explain; and, secondly, responsibility to those who did me the honor to call me from my distant home.

My subject being physical science, and almost invariably demanding proof by experiment, and illustration by specimens, I have, therefore, with able assistance, always prepared my lectures with all possible care, and arranged every experiment and illustration so as to insure success. Then I could stand before the largest audiences without anxiety or embarrassment; could, without manuscript, clearly state and explain my subject, and when the proof became necessary, I could perform the experiments successfully and even beautifully, and exhibit the specimens which some other truth demanded, to insure conviction.

Now, at eighty-two and a half years of age, still by God's forbearance and blessing, possessing my mental powers unimpaired, and looking over the barrier beyond which I must soon pass, I can truly declare, that in the study and exhibition of science to my pupils and fellow-men, I have never forgotten to give all the honor and glory to the infinite Creator, — happy if I might be the honored interpreter of a portion of His works, and of the beautiful structure and beneficent laws discovered therein by the labors of many illustrious predecessors. For this I claim no merit. It is the result to which right reason and sound philosophy, as well as religion, would naturally lead.

While I have never concealed my convictions on these subjects, nor hesitated to declare them on all proper occasions, I have also declared my belief that while natural religion stands as the basis of Revelation, consisting as it does of the facts and laws which form the domain of science, science has never revealed a system of mercy commensurate with the moral wants of man. In Nature, in God's creation, we discover only laws, — laws of undeviating strictness, and sure penalties annexed for their violation. There is associated with natural laws no system of mercy;

that dispensation is not revealed in Nature, and is contained in the Scriptures alone.

With the double view just presented, I feel that science and religion may walk hand in hand. They form two distinct volumes of revelation, and both being records of the will of the Creator, both may be received as constituting a unity declaring the mind of God; and therefore the study of both becomes a duty, and is perfectly consistent with our highest moral obligations.

I feel that, as this subject respects my fellow-men, I have done no more than my duty; and I reflect upon my course with subdued satisfaction, being persuaded that nothing I have said or omitted to say in my public lectures, either before the College classes or before popular audiences, can have favored the erroneous impression, that science is hostile to religion.

My own conviction is so decidedly in the opposite direction, that I could wish that students of theology should be also students of natural science, — certainly of astronomy, geology, natural philosophy, and chemistry, and the outlines of natural history.

In concluding my summary of these labors, I will add, that I have derived no small satisfaction from the intense interest excited, especially in popular audiences, by the exhibition of the truths of science, — and especially when they were illustrated by experiments and by specimens. Among the many thousands to whom I have spoken, and in many different places, I have, with hardly an exception, seen the most riveted attention, the most perfect silence, — except for occasional applause, which I never desired, — and the most exact decorum. When some surprising illustration has been given, perhaps contravening our usual experience; when some grand principle has been announced of wide application, and when some happy appliance to human wants, or to the furtherance of art, has been announced, and the fruitfulness of science in its power to

improve the condition of man has been proved, a beam of delight has often illuminated an amphitheatre of human faces, and earnest inquiries have followed the close of the lecture, — inquiries to which I was always ready to listen and to answer as far as lay in my power.

The annexed passage is from a letter

TO PROFESSOR KINGSLEY.

NEW ORLEANS, *March* 1, 1845.

. . . . . TEXAS excites very little interest here or anywhere else where we have been. Except to the party paper, there is not the slightest appearance of enthusiam about the matter, and the only instance in which it has been mentioned to me with approbation, was by a very able and excellent clergyman, whose church we occupy, — Dr. Scott, who is the Dr. Bacon of New Orleans. He is personally much attached to General Jackson; has been in his family, and received much kindness from him. This gentleman said, that the only reason that made him care about Texas was, that it would drain slavery from the Southern States; and he said it was impoverishing that State, and that they must get rid of it; that Texas was a proper country for them; and that the Mexicans, with whom they would be eventually blended, felt no objection to color in any tint or variety, and all shades are here, from bright dawn to deep midnight. . . . . .

Professor Kingsley was in Europe in 1845. His impressions were communicated to Professor Silliman in his usual concise and finished style.

FROM PROFESSOR KINGSLEY.

LONDON, *August* 26, 1845.

MY DEAR SIR, — Your letter, written in June, I received in Paris just as I was leaving that city for Belgium. I feel

much obliged to you for this communication. You have been often from home, and need not be told what gratification the reception of letters, especially in a foreign country, from an old friend affords. It has given me great pleasure from time to time to learn, by letters from New Haven, not only of the health of my own family, but of that of most, or all, of my friends and acquaintances. The affairs of the College, I understand, have been generally prosperous; and I am now waiting with some impatience to hear of the Commencement which has just passed.

You have known from my letters to members of my family how I have employed myself, where I have been, and whom, to some extent, I have seen, since I have left America. The scene has been pretty constantly shifting; one new object of interest has been following another in rapid succession, and my health and strength have not yet failed. I feel, however, that at my time of life, the substantial advantages of such a tour as I have taken, are not to be expected. If I could have visited Europe forty years ago, and spent a year or two in different countries, I have no doubt that it would have been of important use to me. As the case is, the whole terminates too much in the sight of the eyes. But I have not found that my previous notions of the state of things in the countries I have visited, were very erroneous. Much of the character, as well as the literature of foreign countries, may be learned at home. There is a freshness, however, in actual inspection, which the perusal of books cannot reach. I am, as you know, no geologist; but I was struck, on landing at Dieppe in France, and in travelling to Rouen, with the great similarity of the general structure of the country to that of the opposite coast of England; the whole seemed like one country, except in the inhabitants and the appearance of their towns and villages. The country about Paris is picturesque and pleasant; but the numerous associations connected with every spot, would give it interest even if the natural scenery were ever so tame.

The peculiar mode of building in France and Germany, that is, of having all their houses in towns and villages, gives the country to a traveller, especially to one accustomed to the residences of New England, the appearance of solitude and desertion. One is often disposed to look round and inquire, where are the people? This mode of living was adopted, I suppose, when a residence remote from others was insecure, and it is hard to change old customs. Laborers must often go miles to cultivate their grounds. I have seen nowhere much country, which you would, I suppose, call primitive; that is, such a country as is most of New England. I have seen few considerable hills, except on the Rhine, between Mayence and Bonn, and in a part of Belgium. The streams on the Continent, as in England, are universally muddy. I have not seen any running water, clear and transparent, like the brooks and rivers of New England, since I left home. I have nowhere found water that I could drink with a relish; or, indeed, drink at all. Hence in France, and in some other countries, I have found it necessary, occasionally, for my "stomach's sake," to drink some of the light wines which are abundant and pleasant. Bavarian beer in Germany is a good substitute for their bad water. I have not had or sought opportunities to see many scientific and literary men where I have been. I saw Arago twice in Paris, and might, I suppose, have been introduced to him; but I saw no use in it. In Berlin, I attended one of the meetings of the Academy, where I saw most of the savans of the city. Professor Rose read a dissertation on the effect of fire on porcelains, which was listened to with attention; but my knowledge of German was too limited for me to understand well the drift of the piece. I was told, that his object was to explain, how it happens that porcelain, in the burning, contracts in bulk, and still has less specific gravity. Perhaps I err in the statement. There are two professors of the name of Rose, who are, I understand, brothers. The one who read the

dissertation was, I believe, the chemist. I attended two meetings of the Geological Society in London, some account of which I gave in a letter to my family, with a direction to have it read to you; so that it is unnecessary to repeat what you have already heard. I was struck with the business character of these meetings. The members appeared to be all interested in what was read or spoken. They canvassed each other's opinions with freedom, but with entire civility. I was much pleased with your old friend and correspondent, Dr. Mantell. He is very gentlemanly in his appearance and manners, — has no stiffness or formality, and is easy of access. He has a beautiful residence in Chester Square, Pimlico. Among the articles which I saw in his house, — and I suppose I entered almost every room, — I was not a little amused to see his *Diploma of Doctor of Laws*, in a handsome frame, suspended in his parlor. This important instrument, you may recollect, I made out and wrote myself, and I was at first a little startled to see my fair hand advanced to such honor. I can give you some more particulars of the Doctor when we meet. Mr. Lyell, as you probably know, is to lecture again this winter in Boston. He and Mrs. Lyell go to America in the steamer from Liverpool, the 4th of next month. I called on Mr. Lyell yesterday; but he was out. I saw his wife, however, who appeared pleased with the prospect of another visit to the United States. She said that after the lectures, she and her husband would probably visit New Haven. They are intending to go South as far as New Orleans. She had got the impression that your journey, or some part of it, to that city, was unpleasant; but I told her that I had heard nothing of the kind. I notice your mention of having your children and grandchildren about you this summer. This must have been to you and Mrs. S., a source of much enjoyment. We have it on high authority, that children are "as arrows in the hand of a mighty man," and that "happy is the man that hath his quiver full of

them." You and I, as you are without doubt fully aware, are on the shady side or down-hill of life, and to see our children virtuous and happy, is one of the chief enjoyments which one can anticipate, in the little time that remains to us. My best respects to Mrs. Silliman and to the other members of your family. I hope to be home sometime in the approaching autumn, but cannot fix the time of my return with certainty. It takes time to pick up books, if the work is to be done advantageously. I should like, on some accounts, to travel more on the continent of Europe, and to visit more particularly Switzerland and Italy; but for reasons mentioned above, I shall not enter on such a tour. I shall hasten my return as early as it can be done, with a proper regard to the business I have undertaken.

Yours truly,

PROF. B. SILLIMAN. J. L. KINGSLEY.

About the same time another associate and friend was travelling abroad; and from a letter of his the following extract is taken: —

FROM PROFESSOR T. D. WOOLSEY.

ATHENS, *March* 12, 1845.

. . . . . The Piræus seemed much larger than I had expected to find it. Though the entrance is narrow, it is a very commodious harbor, and a very deep one. Several ships of war were at anchor within its mouth; although the more favorite place for large ships is outside of the harbor, in the roadstead between Salamis and the main land, just where the sea-fight between Xerxes and the Greeks was fought. And in fact at this time two large ships are lying in this very roadstead. It is about five miles from the port to Athens, by a road which ascends a little all the way. The height of the plain above the sea is considerable, if, as is stated in works of authority, the height of the Acropolis is more than five hundred and thirty-four feet above the

sea; for the Acropolis cannot be more than two hundred feet above the plain. The modern city now contains about twenty-five thousand inhabitants, and is in general miserably built, resembling much one of our Western towns, which have arisen in a hurry amid the stumps of newly-felled wood. There are, however, some good houses, and the palace is quite a respectable building. You are acquainted with our Missionaries, Mr. Hill and Mr. King. They have both treated us with every kindness, and in the ladies of the former family my wife finds polished and excellent friends, whose society she can enjoy. The scenery here has far surpassed my expectations in its beauty, I may say its loveliness. The plain is far greater in extent up the valley of the Cephissus than I had imagined, and forms a most agreeable contrast to the sterile mountains, Hymettus, Pentelicus, Parnes, Ægaleus, which enclose the landscape on three sides. The fourth side, as seen from the Acropolis, is that where the beautiful indentations forming the ports of Phalerum, Munychia, and Piræus, and the vicinity appear in sight, while beyond lie Salamis, Ægina, Porus, and the Epidaurian coast, and the island of Hydra. At a distance we saw the Acropolis of Corinth, and above Mount Ægaleus appear the tops of Cithæron and Mount Geranea. I have gazed upon few landscapes with more pleasure than I did upon this yesterday from the threshold of the Parthenon; — or, to speak more accurately, from a spot just behind the rear of this building. . . . . .

The induction of Edward Everett into the office of President of Harvard College, is thus described in a letter of Professor Silliman.

TO PROFESSOR KINGSLEY.

BOSTON, *April* 30, 1846, 9 P. M.

MY DEAR SIR, — I have had a busy day at Cambridge, and now devote the remainder of it to you, agreeably to

your request and my promise. I forwarded from New Haven President Day's letter, announcing my coming, and on my return from Salem on Tuesday evening I found a special invitation to myself to attend the ceremony and the dinner. This morning at nine, I went over in an omnibus, and was seasonably in Gore Hall, — a very magnificent room, and soon filled with Alumni and others. I saw many whom I knew, and had agreeable renewals of old acquaintance. Professor Lovering took me in charge in the procession, and I got a berth for Tutor Noyes with Professor Pierce, and we were placed on the stage. . . . . I enclose a programme of the exercises, and you will find, no doubt, a full account in the "Boston Atlas" at our house, or at Benjamin's. The procession was very extensive, and the house perfectly filled, — particular ladies being admitted to the galleries by tickets, and other ladies taking their chance. There was the most perfect order, with an audience as large as our fullest Commencements; the only exception was from the uproarious clapping and stamping, — sometimes continued a long time, so as to raise the very dust from the floor in clouds. This was particularly the fact just as President Everett began his address; the students were so noisy and tempestuous that the President sat down, as it was impossible to hear anything. It seemed at first disrespectful, but it was presently explained by Mr. Webster's mounting the stage, and the applause was meant for him, — and, by-the-by, he was attended recently on his arrival here in the cars by, it is said, ten thousand people, enthusiastically cheering him to his lodgings. When Mr. Everett resumed his address he very adroitly alluded to Mr. Webster, wishing that the duty of addressing them had been assigned to his illustrious friend, who, he was sure, would perform the duty to their perfect satisfaction; this then was tremendously cheered, and it was sometime before the President was very fairly launched. He then went on for one and a half hours, with frequent applauses, in a very able

and eloquent discourse, pronounced in his splendid manner, — without a MS., and with the utmost readiness, and yet with perfect deliberation. You will see it by and by in print. The subject was learning, and its influence; Colleges and Universities, — their proper objects; discipline (mental) and course of instruction. He based the whole upon a proper moral and religious influence which he regarded as more important than all the rest. This discourse was entirely worthy of himself, and fully sustained his high reputation. Governor Briggs inducted him into office in a very dignified manner, and with very impressive remarks.

At the dinner I was taken by Dr. Pierce of Brookline, and placed with the overseers, or corporation, (I do not know which,) between Dr. P. and Judge Fay, and in the society of Professor Beck, Dr. Harris, Professor Pierce, &c. The dinner was served in a fine room constructed for a picture-room and banqueting-hall in old Harvard. *There was no wine,* — only lemonade; the very first instance of the kind that has ever occurred here, but they were quite as joyous in their toasts and speeches as if excited by alcohol, and as it was all moral and intellectual excitement, it was all so much the better. Among the speakers was the President himself, who conducted the ceremonial with admirable tact; then the ex-President, speaking partly from notes and with some hesitancy, but with very good effect, and no small share of humor, of which I may give some account in conversation; it would take too much time and paper now. Mr. Webster was lauded and superlauded, — and indeed they all "put it on very thick upon" each other. Mr. W. disclaimed speaking on politics, especially on party politics, but evidently alluding to Ingersoll, he said that if he were to speak on politics it would not be in the *lingua academica,* nor in the vernacular, but *in lingua pessima jargonæ.* They say he does not excel on such occasions, and I did not think he was *sibi æqualis.* Dr. Holmes read a very humorous poem, — full of fun and full of puns.

Robert C. Winthrop made a capital speech. Professor Hitchcock spoke sensibly, but with some embarrassment, on being toasted, and I was called up and did as well as I could in such a conjuncture. I was thanked by Mr. Everett, and by many of the Cantabs on account of the spirit of my remarks, which were conciliatory and friendly. On the whole the occasion went off admirably, and the utmost good feeling prevailed among old and young, Cantabs and strangers. I went with Professor Pierce to see their new Observatory, which is fine, and reproaches us. I ended with the President's levee, and returned to town, highly gratified. Very many inquiries were made about our good President and you, and kindest messages sent. They have now brilliant prospects at Harvard, and are all in high spirits. Please show this to my family and the President, if he should call for it; my coming on was happy, as it was evidently very acceptable. Please tell B., my son, that his letter is just received, and will be attended to. I wrote a little brief* of remarks which I enclose; my spoken address was more copious and more mellow and flowing; please leave the paper with the family. If they should report anything in the Boston papers, you can observe whether the train of thought is similar. To-morrow I shall devote to calls and a little business, and the next day be off for Hanover.

The letter which follows adverts to investigations in which the writer was engaged respecting the Pilgrims during their stay in Holland.

FROM MR. GEORGE SUMNER.

PARIS, *July* 1, 1846.

. . . . . YOU were so kind, by your letter, as to offer me the services of yourself and son "whenever they might prove available." Such offers are not to be neglected. I

* Not used but merely as a basis.

have begged my brother, Mr. Charles Sumner, to send you from Boston two copies of a memoir upon the ten years' residence of the "Pilgrims" in Holland, which is the result of researches made by me in Leyden and elsewhere, with the hope of clearing up, in part, the obscurity that hangs over an important portion of the early history of the settlers of New England. I should be gratified if you would do me the honor to accept one of these copies, and (if it be not giving you too much trouble) to present the other, *de ma part*, to the Historical Society of Connecticut. Some of the conclusions of this memoir are not in exact harmony with the statements of many of our writers; and it was with some hesitation — and only after a good deal of labor, which, however, brought to light little but *negative* evidence — that I found myself compelled to adopt them. One thing which it perhaps shows, is the error of those who have so often harped upon an imaginary sympathy, between the Pilgrims and the shrewd, beer-drinking Burghers of Leyden. . . . . I might give you some details of the present scientific movement in Paris, which would perhaps interest you; but this is the last moment for writing by the steamer of the 4th, and I must make my letter as short as possible. The news of the settlement of the Oregon limit and of the progress of the Mexican war, have made considerable sensation in Paris. The French press in general is delighted with the *reculade* which England has made, in accepting in 1846 that which twenty years ago it declared, through Canning and Huskisson, could *never* be accepted, and that which less than a twelvemonth since it declared "inconsistent with its just expectations, with fairness, and with equity." The journals which have occasionally reproached the United States with inertness and inability to act in an emergency, seem surprised by the energy developed on the Mexican frontier. . . . . .

CHAPTER XVIII.

CORRESPONDENCE WITH SCIENTIFIC MEN.

Letters of Berzelius. — Berzelius proposes a Correspondence; Allūdes to his own Work on Chemistry, to Professor Silliman's Experiments with the Deflagrator, to the "Journal of Science," to Dr. Hare. — Letter from Dr. Henry. — Correspondence with Mr. Maclure. — Mr. Maclure on the Subject of Education: Professor Silliman on Owen, on Speculative Opinions in Politics and Religion; Recommends a Benefaction to Science; on Mr. Lyell's *Geology*, on European Politics, on the Tariff, Slavery, and Nullification. — Letters of Robert Bakewell. — Mr. Bakewell on the Mosaic Cosmogony, on Lyell and Buckland, on Lyell's *Geology*, on his own *Geology*, on Scientific Journals, on Oxford and Dr. Buckland, on Mantell and his Museum, on Coal-Beds in America, on Storms, on Murchison's Geological Work, on a Universal Language, on the Insect Tree.

AMONG the scientific men of Europe with whom Professor Silliman occasionally corresponded for a long series of years, was the eminent Swedish chemist, Berzelius. This correspondence began at the request of the latter, a few of whose letters are given, either entire or in extracts, below: —

STOCKHOLM, *July* 13, 1820.

. . . . . YOU cultivate a science to which I have devoted the greater part of my time. It would be very pleasant to me if you could maintain a literary correspondence with me. I cannot promise you that my letters will have the same interest as those of an inhabitant of France or England; but, as we are not entirely confined to Sweden, I can perhaps from time to time furnish you with interesting news.

If Mr. Griscom, whose acquaintance I had the pleasure of making in Paris, has returned to New York, I beg you to remember me to him. If an exchange of the minerals of America for those of Sweden and Norway would be agreeable to you, you have only to let me know, and to tell how you would like this exchange to be effected.

Receive, Sir, the assurance of the high consideration with which I have the honor to be

Your very humble and very obedient servant,

JAC. BERZELIUS.

STOCKHOLM, *March* 20, 1822.

SIR, — . . . . . I am very happy to learn that the minerals have arrived in safety, and that you are satisfied with them. I willingly take advantage of your kind offer, to ask from you some American minerals, of which almost any would be welcome for a beginning, since we have but but very few here. . . . . I take the liberty of sending you a copy of the French translation of my work upon the Blow-pipe, since you do not read German. I am particularly interested to have you judge my work as it is, and not as Mr. Children has rendered it; for some of my pupils now in England write me that Mr. Children, whose translation of my work I have not yet seen, has injured it in several places, sometimes by changes, in others by abbreviations, and in others by his own notes. I hope soon to be enlightened on this subject through my own eyes.

Your experiments with the deflagrator have interested me much. I have one almost completed, and I look forward with pleasure to the brilliant phenomena which I am about to witness. The discordance of the ordinary pile with the deflagrator appears inexplicable to me, except by the theory of Mr. Hare, which, though ingenious, I find it difficult to admit, since the electro-magnetic phenomena are in all their characters the same as in the ordinary electricity. I have nothing important to communicate to you

from my laboratory, except that in the analysis of the waters of Carlsbad, in Bohemia, which I visited the last summer, I discovered several substances which have not before been found in solution, such as the fluate of lime, the carbonate of strontian, the phosphate of lime, and that of alumina. These substances are found dissolved in free carbonic acid. The tufa which these waters deposit are like arragonite, which establishes the idea of Mr. Stromeyer, that it is the carbonate of strontian which determines the arragonite form of this species of the carbonate of lime.

. . . . . I do not possess the work of Mr. Cleaveland, and I doubt whether it is to be procured in London. I venture to beg you to purchase a copy for me; I have requested Mr. Hughes to repay you the cost. . . . . .

STOCKHOLM, *June* 28, 1832.

SIR, — I pray you to accept the accompanying five volumes of my Chemistry, as a testimonial of my esteem and consideration, not to say gratitude, for your kindness in sending us your excellent Journal. The work which I send you is not yet finished; but I thought it best not to wait longer, that you may not lose entirely the *gratia novitatis* of the first volumes. The sixth volume should already be out, although I have received no notice of it, nor had any copy sent. The entire work will consist of eight volumes. The sixth will still be on vegetable chemistry; the seventh on animal chemistry; and the eighth on the operations, manipulations, and instruments of the laboratory, as well as a treatise on crystallography, of which Mr. Mitscherlich is the author. My translator having been seized by the cholera, has been for a long time dangerously ill from the consequences of this dreadful disease, which has been, especially in France, so disastrous. The work is therefore suspended for the moment, and I shall probably not have the pleasure of sending the rest to you till the next year.

Accept the expression of the sentiments of esteem and consideration with which I have the honor to be, Sir,

Your very humble and obedient servant,

JAC. BERZELIUS.

STOCKHOLM, *March* 10, 1846.

SIR, — I embrace the opportunity offered by Mr. Ellsworth, to thank you for two letters, one of which reached me by Mr. Ellsworth, and the other arrived a few hours after. I was much flattered by what Mr. Ellsworth made known to me of your wish to possess a likeness of me. I gave him one which they pretend is successful, and I suppose he will forward it to you by this same opportunity.

We have many thanks to present to you for the continued remittance of your Journal, — the Academy of Sciences as well as myself. The last number which reached us is No. 94; so it seems that there are still wanting six numbers before the termination of the Journal under the old form. Professor Sefstrom, to whom you have sent your Journal, has been taken from us by a stroke of apoplexy, towards the close of the last year. This loss is greatly felt, for he was an active man, full of zeal, especially in the application of the sciences to the arts.

In the knowledge of what pertains to the manufactory of iron, we have no one to be compared with him. His successor in the School of Mines is Professor Akermann, who is on the point of transferring the School of Mines of Fahlun, where he is at present, to the capital, considering this change to be advantageous, since the mines at Fahlun begin to be exhausted.

I am under great obligations to you for the trouble you have taken to distribute the copies that were sent of my paper on the Blow-pipe. Will you be good enough, when an opportunity offers, to present my respects to our friend Mr. Hare. I owe him a long controversial letter on scientific matters; but, to tell the truth, my time is so much oc-

cupied by the new edition of my "Treatise on Chemistry," that I can hardly find time for anything else, especially at the age of sixty-seven years, when one cannot hope to have the necessary vigor to undertake again a work of ten volumes. Nearly two thirds of this edition I have still to compose. Besides, it is a little hazardous to enter into a private discussion with this savant, because he immediately prints all that is written to him, followed by a refutation. I have sometimes been surprised to read in your Journal a reply to my ideas that I had never seen except there. One cannot be angry, however, for Mr. Hare is a good man, and seeks the truth before everything; but that makes one desire not to turn a private controversy into a public one. But much depends on the habits of different countries. . . .

Will you have the goodness to give the enclosed note to your son.

Receive, I beg you, my dear Sir, the assurance of the high consideration with which I have the honor to be, Sir,

Your very devoted servant,

JAC. BERZELIUS.

Professor Silliman's "Chemistry" was received with approbation by the veteran chemist, whose own work he had introduced to American readers.

FROM DR. WILLIAM HENRY.

MANCHESTER, *May* 9, 1831.

MY DEAR SIR,—I avail myself of the earliest opportunity of offering you my best thanks for the obliging present of your "Elements of Chemistry," which reached me from London only a few days ago; and I am induced to offer my acknowledgments thus early, because to-morrow I am about to leave home for some time, and may not soon again have an opportunity of getting my letter conveyed to Liverpool. Of course I have only had time as yet, especially

as I have been occupied in preparations for my departure, to give more than a cursory glance over your pages. This, however, has been sufficient to convince me that you have exerted great industry in collecting the materials of your volumes, and great skill and judgment in condensing and arranging them. Immediately on my return, I shall have much gratification in going over your volumes, with the leisure and attention which are necessary to enable one fully to profit by them. In this country very little has been done lately — so far as I am aware, is now doing — that is adapted to extend the boundaries of chemical science. We have had for some time past one of those seasons of repose of which the history of Natural Philosophy furnishes many examples. We may hope that it will be followed, as heretofore, by one of those seasons of ardent and fruitful invention and discovery, during which science springs forward with the greatest eagerness and success. I cannot close this letter without thanking you for the very handsome terms in which you have spoken of my labors in the field which we all water in common. To be so estimated by one so capable of judging is both a reward for the past and an incitement for the future. I beg to assure you that I am, with sincere respect and esteem, dear Sir,

Very respectfully yours,

WM. HENRY.

With Mr. William Maclure Professor Silliman maintained a correspondence for a considerable number of years. His estimate of the character and services of Mr. Maclure is given on a previous page. The religious views of the latter were far from being consonant with his own; nor did Mr. Maclure's schemes for social reorganization commend themselves to his judgment. Yet there was much in his

spirit, and in what he did for science, which Professor Silliman honored.

FROM MR. WILLIAM MACLURE.

October 19, 1822.

. . . . . YOUR ideas concerning the utility that would result to mankind by a more strict attention to positive knowledge in our Colleges, agree perfectly with my own, and I think that the means you propose would much tend to produce that desirable effect. I only regret that my circumstances are not adequate to the accomplishment of so beneficial a change. When I retired from commerce about twenty-five years ago, I looked round for some occupation that might amuse me always, convinced that a man had the choice of his amusements as well as of his profession, and that common sense dictated an amusement that would produce the greatest good, for it is an axiom with me that it is the positive and real interest of every individual in society to have as many friends and as few enemies as possible. To obtain them he must do as much good and as little harm as possible. In reflecting upon the absurdity of my own classical education, launched into the world as ignorant as a pig of anything useful, not having occasion to practice anything I had learned, except reading, writing, and counting, which any child could now acquire in six or eight months of a Lancasterian School, — I had been long in the habit of considering education one of the greatest abuses our species were guilty of, and of course one of the reforms the most beneficial to humanity, and likewise offering to ambition a fair field. Almost no improvement had been made in it for two hundred or three hundred years; there was immense room for change to put it on a par with the other functions of civilization. The task appeared easy, and the credit to be acquired by any change considerable, for nearly the same reasons. I adopted rock-hunting as

an amusement in place of deer or partridge hunting, considering mineralogy and geology as the sciences most applicable to useful practical purposes, but, like most of the things of the greatest utility, neglected, — having long given up all idea of changing the opinions of man as a labor far above my abilities. I have been endeavoring, for some twenty years, to change the education of children, and stumbled by accident about eighteen years ago on the school of Pestalozzi in Switzerland, which subserved the useful purposes that I had formed to myself of a rational education. I have been ever since doing something towards propagating and improving the scheme, and the success in the fruits are more than I expected; for it has won some of the most promising young men in our country, such as Henry Sybert, &c., &c., but has not been able to penetrate deep into the crust of prejudices which is early interwoven with our self-love, so as to make the greatest part of mankind jealous and inveterate enemies of any system that gives knowledge on cheaper terms than they themselves paid for it; though I have little doubt that in time some such system will generally prevail in our country, where the power, being in the hands of the people, through the medium of our popular governments, renders a diffusion of knowledge necessary to the support of freedom, and of course the necessity of an almost equal division of both property and knowledge, which the advantages given to those who can afford to send their sons to colleges very naturally counteracts. In the letter enclosed in the small box of lavas, you will receive four of my political essays translated into Spanish, by which you will perceive the consequence I attach to an almost equal division of property, knowledge, and power, as the only firm foundation of freedom which includes the happiness of mankind. The disgraceful ignorance of the higher orders in this country * is the most fortunate circumstance in favor of the freedom of the Spanish

* Spain. — F.

nation, for they are all enemies to the liberties of the people, and friends to despotism, but from their imbecility all their plans of destroying the happiness and freedom of their nation fail, and have as yet strengthened the constitution which they were laboring to destroy. The reform in the common schools is the only mode of equalizing knowledge. Not one in a thousand in any country can have a college education, and when once the schools are modelled upon the forms of utility the colleges must follow, or none will attend them. That knowledge can be obtained in a twentieth part of the time that is wasted by the ancient, monkish system, there can be no doubt. Mr. ——— has a school in my house at Paris, for the last two years, and boys from eight to ten years old become good mineralogists and chemists, almost equal to the analysis of rocks, and speak and grammatically understand three to four modern languages, Mathematics in all its branches, are good arithmeticians, and in short before the arrival of that critical time, the age of puberty, they will possess more useful knowledge than they could have had by the old system at the age of thirty or forty. . . . . .

TO MR. WILLIAM MACLURE.

NEW HAVEN, *March* 23, 1825.

. . . . . MR. OWEN, I hear of frequently through the papers, but have not seen him yet. I observe he has given a lecture or lectures to Congress, but with what success I know not. In this country, and especially in that part of it where he has fixed his destination, there will be at least a perfect freedom from any opposition,— no corporations, no prescriptions, no inveterate habits, and no legal impediments to oppose his success. You have heard of the noble treatment which Congress has given to General Lafayette, and of the perfect quiet and good feeling with which a new President was elected by the House of Representatives. The friends of legitimacy must now despair of

the instability of our institutions, since, without force to support them, they are more firm than the monarchical establishments are with all their military array. . . . .

TO MR. WILLIAM MACLURE.

NEW HAVEN, *April* 18, 1825.

. . . . . I AGREE with you substantially as to the importance and efficacy of knowledge, and the baneful effects of ignorance, but in the idea of knowledge I include that of our duties as moral and accountable beings, in which I trust you will agree with me, and therefore I presume that when you speak of speculative opinions on politics and religion as the greatest bar to civilization, you rather refer to the abuse too often made of a good thing than to the employment of one intrinsically bad. Correct speculative views in politics are most likely to lead to correct practice, and it is the same with religion. A bad or false system of either will almost necessarily lead to bad practical consequences, but a true and correct view will most probably lead to happy results. It is possible that our opinions on some of these subjects may differ, but we agree on so many important ones that I cannot doubt we shall mutually grant to each other the liberty to differ, where we actually entertain different views. Everything is going on very happily in this country, in our political and literary and social institutions, and I trust you will find that during the years that have passed since you last left us, we have made considerable advances. Wishing you a safe passage and happy arrival,

I remain, dear sir, very truly yours.

TO MR. WILLIAM MACLURE.

NEW HAVEN, *April* 13, 1829.

. . . . . YOUR kindness and uniformly cool and considerate attention to the subjects suggested by your friends will, I doubt not, pardon my alluding again to a subject

about which we corresponded when you were in Spain. I have no direct personal interest in it, except as a cultivator of mineralogy and geology, but I have always wished that there might eventually be an establishment on that subject *to bear your name*, and to diffuse knowledge and benefit to this country, when you and I are gone. Even a *posthumous* dedication of a small portion of your fine Western or Spanish territories would accomplish the object without seriously interfering with your great and interesting undertaking at New Harmony. Forgive this liberty, and take no notice of this part of my letter in your reply, unless it is altogether agreeable to you to do so. I shall certainly take no exceptions at your silence on this subject, if you take none at my freedom. . . . . Our great scramble for the Presidency is over, and General Jackson is crowned. Happily the institutions of this country are so established in the habits and affections of the people that a change of men makes little change in measures. There are removals from office, inconvenient to individuals, and often injurious to them and the country, but there seem to be in this country no elements of discord leading to anarchy and bloodshed. If any expedient can be devised by which our domestic slavery can be removed, it would avert what is in my mind an incessant source of anxiety, and I think that the plan which you once suggested of removing them West — at least in part — to labor voluntarily as freemen, is worthy of more attention than it has received. . . . .

TO MR. WILLIAM MACLURE.

NEW HAVEN, *June* 7, 1831.

. . . . . I KNOW not whether the most recent geological works are sent out to you by your friends; that of Mr. Lyell now occupies a good deal of the attention of European geologists. I have not yet quite finished the perusal of it (viz., Vol. I.,—Vol. II. has not appeared yet). I see, however, the drift of his argument, which is to prove that

great effects are produced by existing causes, such as we now see operating around us, in modifying the crust of our planet, and even in generating geological formations, and he has indeed made out his case more fully than one would have imagined that he could. Although rather diffuse, it is, on the whole, an interesting and instructive work; but I think he has only altered the relative order, not changed the nature, of geological evidence. If he is correct, we must impute more to causes now in operation, and less to ancient catastrophes than we have been accustomed to believe. Everything of public news you, of course, obtain from the papers; and you doubtless observe, with great interest, the progress of the Polish struggle, and of the course of popular liberty throughout Europe. To us, that struggle is, on many accounts, very interesting, not merely from our sympathy with our fellow-men, but because it would now appear that the great problem of the stability of our institutions is settled, and if we are faithful to ourselves in vigorously pushing the great interests of education, and thus causing the rising generation to be what they should be, we are safe; for our government and administration, being what the most numerous class of voters choose they should be, there is neither cause nor means of revolution other than in changing officers by elections. Thus a government which seemed in theory the most feeble, proves in practice the most stable, and I trust it will ever endure.

TO MR. WILLIAM MACLURE.

NEW HAVEN, *January* 25, 1832.

. . . . . In this country there is at present great agitation in the public mind on the subject of the tariff, but all this you will see in the public prints. What, however, will interest you much more is, that the public mind is awakened, more than it ever was before, to the dangers of slavery. This state of feeling has been produced evidently by the bloody insurrection in Southampton County, Va., dur-

ing the late autumn. The subject is now in the progress of the most animated and thorough and courageous discussion in the Virginia Legislature, and it seems to be conceded on all hands that something must be done. Colonization in Africa, colonization in some of our Western territories, emancipation *en masse*, gradual emancipation, holding on under the present system,— these seem to be the alternatives, and you will agree with me that they are sufficiently appalling. There are two millions now, and there will be three millions by the next census, and five by the time the children are men and women. What has been found to be the effect of general and sudden emancipation in Mexico? Have the quondam slaves become more turbulent and vicious, and less industrious? I suppose, however, that the slaves there were not to any great extent negroes, but rather Indians. You may observe that there is now a great effort making in England to obtain emancipation for their slaves in the West Indies, not gradually, but in mass. This is a great question, and it must very soon engage the attention of mankind where there are slaves, or those who are held in virtual bondage, as in Russia. The cruel oppression exercised over Poland, and recently consummated in blood, must sooner or later be visited upon that proud and wicked monarchy. . . . . .

TO MR. WILLIAM MACLURE.

NEW HAVEN, *April* 16, 1833.

. . . . . You will have observed that we have been apparently on the eve of similar convulsions, but the storm has for the present blown by, although I am by no means sure that it will not gather again. Possibly, not on the subject of the tariff, for the opposition on that ground being avowedly withdrawn, there will be no decent pretence for getting it up again, unless the duties should be again increased, and against this, I think that the voice of the country would be generally raised; for even the friends of the pro-

tective system think that the policy has been stretched too far, and, on the other hand, the suffering that has been proclaimed so loudly is pronounced by the Union party of South Carolina to be ideal, because their crops sell as well as before the tariff, and their expenses for the clothing of their negroes, &c., are not more than half what they were in years gone by. I suspect that the real danger to the Union grows out of quite another subject,—namely, the institution of slavery itself, against which you so justly and decidedly protest. The rapid progress of public opinion in Great Britain, which has already denounced slavery in the West Indies, and will probably not permit it to exist more than a very few years at the utmost, greatly alarms our Southern slaveholders. They had a dreadful example of domestic insurrection in Virginia, in the autumn of 1831; not a few persons are engaged in various parts of the Union in denouncing slavery, and in urging its abolition *in toto* and at once; and although this may be premature, and, in our actual circumstances, unjustifiable, it has its effect. It seems now apparent that slavery cannot be sustained indefinitely in this country. But the effort which I fear will be made before many years to sustain it will, I also fear, take the form of attempting to rear in the South a distinct empire, embracing as many slave States as can be induced to join it, and embracing, perhaps, all except Maryland, Western Virginia, and possibly Kentucky; and then they must have Texas *per fas aut nefas;* and the great features of this confederacy will be slavery, and dependence on the favor and protection of a foreign power, which, must, I suppose, of course, be England. They do not seem to take into view at all the tremendous internal danger from their own efficient physical population, the rapid increase of which is encouraged, and, I might say, insured, by humanity, cupidity, climate, plenty, &c. This appears to be the aim of at least the most violent of the South Carolina nullifiers, and, indeed, they do not hesitate to avow it; but the most sober-

minded people in the other Southern States will probably be slow to go these lengths, and I trust you may consider the country as pacified for the present.

TO MR. WILLIAM MACLURE.

NEW HAVEN, *October* 31, 1833.

. . . . . YOUR remarks on our Federal Union and political measures certainly deserve serious consideration, although I conceive our case is not exactly parallel with that of Switzerland, an inland country, without foreign commerce, and composed of members, I suppose, much more discordant than ours. I am much impressed with what you say as to the tendency which the duty on sugar has to encourage slavery. I think that must be true; but I suppose nothing can alter the policy. It is, I believe, a settled thing that the cultivation of sugar in Louisiana is to be thus encouraged at whatever hazard; the singular inconsistency seems to have been overlooked of opposing a Northern tariff for encouraging manufactures by freemen, while a manufacture by slaves in the South is thus sustained. For myself, however, I wish to see as little as possible of tariffs, and would prefer to have individual enterprise and industry to work its own way with as little interference from Government as may be. I am glad to hear that your distracted country — Mexico — is in a way to get settled in anything like permanent order and tranquillity, and hope that they may eventually find out the best method of governing themselves. At present everything appears tranquil in this country; the high excitement in Carolina seems to have subsided, and it will not be easy to get up such a state of things again very soon. Congress will soon meet again, and you will see in the annual budgets of the President and his officers the state of the country. Collisions and excitement must of course be expected in a country where there is freedom; at one time it will run on

one subject, and at another time on something different. At present there is no small feeling as to the Bank of the United States. The United States deposits are, or are to be, removed from it to some of the State banks, preparatory to the suppression of the institution, which the President and some of his Cabinet appear to have much at heart. . . . . .

TO MR. WILLIAM MACLURE.

NEW HAVEN, *July* 24, 1835.

. . . . . THE project for cheap books is an important one, and knowledge ought to be brought home as much to the common people as possible; much has been done in this way, and is doing, as you observe, in England, and much more might be done in this country. The great question that now seems likely to agitate us in this country is slavery. The progress of moral sentiment on that subject, and the increasing experience of the mischiefs of slavery, are producing changes in the public mind; and although some people, as you may perceive by newspapers, are going too fast and too far, I doubt whether the subject can stand still even in the slaveholding States. Very recently there has been in New York a meeting of persons from those States, whose object seems to have been to oppose, by public speeches and resolutions, the movements in the non-slaveholding States; they have, however, manifested such an entire aversion to approach the idea of freedom for the colored race, in any event and under any circumstances, that I fear the effect will recoil. The subject will not rest; and I am apprehensive that if nothing is done, the time will come when scenes like those of Southampton, Va., may be renewed. The example of the British West Indies is fully before us, and cannot be without its effects here for good or for evil. I should like to know your views of the effects of manumission in Mexico and Columbia, and whether the condition of the colored races has been improved by it. . .

TO MR. WILLIAM MACLURE.

NEW HAVEN, *November* 4, 1835.

. . . . . As I am thus successful *with the many*, I have even considered whether it was not my duty to throw myself abroad and loose myself, at least in part, from my connection with the College, that I might benefit the people, while I impose upon them a trifling tax. I think I might agree with the College to be absent a part of the year, but I must relinquish a part of my salary; and it might not be prudent to risk the welfare of my family by relinquishing a certainty, although a small one, for the caprice of popular favor, which may change. I think, however, by relinquishing $300 or $400 per annum of my salary, I might get liberty to be absent permanently in March and April, which are term-time, and the only part of the year when I would lecture in cities, as I must be here for the winter chemical course. . . . . .

The high respect which Professor Silliman entertained for the celebrated geologist, Robert Bakewell, has been already expressed in a passage from the "Reminiscences." Mr. Bakewell was a man of marked individuality, an original explorer and thinker in the field of geology. There are few more racy letters among Mr. Silliman's papers than those from him, portions of which are here presented. It should be stated that Mr. Bakewell was attached in religion to the school of Priestley and Belsham, with which Mr. Silliman, of course, did not sympathize.

FROM MR. ROBERT BAKEWELL.

HAMPSTEAD (near London), *February* 2, 1830.

. . . . . THE remains of the enormous Iguanodon have at length been discovered out of Sussex; a portion of the

Sussex beds extend, as has been some time known, into the Isle of Wight, but no bones were found in them till the last autumn. The condyle of a thigh-bone in Mr. Mantell's museum at Lewes I measured: it was thirty-five inches in circumference!! Have you seen Dr. Ure's book on geology? It was intended as a catch for religious people to satisfy them that the world was made, as he says, in "*six working days*"; but he violates the Mosaic account as much as any preceding writer, for he makes a seventh working-day after the Deluge to create the present race of animals. Dr. Ure is profoundly ignorant of practical geology, and places the lias next to the chalk. Dr. Ure is said not to be a practical religionist any more than he is a practical geologist. In this country a pretence to religion and principle is more often esteemed than the reality. He is no true friend to religion who would force astronomical and geological observations to coincide with the literal Scripture phraseology addressed to mankind in their infant state, and never intended to teach the sciences. . . . . I live rather out of the world, and have little new to communicate. A few weeks since, Mr. Mantell, the discoverer of the Iguanodon, and Mr. Lyell, foreign secretary to the Geological Society, came to breakfast with me. Mr. Lyell has published a work in two volumes, entitled "Principles of Geology," being an attempt to trace present appearances on the globe to causes at present existing and in activity. There is on this subject much diversity of opinion. Dr. Buckland supports the opinion that the surface of our planet has been cut out and made by causes not at present going on, — the action of deluges. I have not yet seen Mr. Lyell's book; but I am convinced that we must resort to both ordinary and extraordinary causes to explain geological phenomena. . . . . .

FROM MR. BAKEWELL.

November 16, 1830.

I HAVE not seen Dr. Morton's paper on the tertiary formation of New Jersey; but Mr. Mantell, who has read it, does not consider it as affording satisfactory proofs of such formations. Mr. Lyell's book is out in the first volume. If you have seen it, you will think there is much Scotch amplification. A Scotchman can never write briefly and directly to the point. The principal merit is making that part of the Huttonian system more clear which treats of recent formations and those at present going on; geologists of late have too much overlooked the extent and importance of these formations. What he says of calcareous strata forming by warm springs holding calcareous or silicious earth in solution, is a modification of what I advanced in 1815, second edition of my "Geology," chap. xvi. The most ingenious part of the book is that on temperature, in which he endeavors to prove that the polar and equatorial zones of the globe might change their temperature by a transference of the land. Indeed, he has shown that a difference of temperature equal to ten or fifteen degrees of latitude is at present produced by the different disposition of the land and sea in the same latitudes. I think his arguments against the progressive development of organic beings far from satisfactory, and that the chapter on the recent formation of man is a tissue of far-strained mystification and special pleading. Not that I deny the recent formation of man; but, on Mr. Lyell's own principles, we have no more reason for thinking him a recent animal than we have for inferring that monkeys and all the mammalia are as ancient as the globe itself. . . . . I am afraid you will grow tired of this geological gossip, and rejoice that you see land. . . . . .

FROM MR. BAKEWELL.

HAMPSTEAD, *September* 24, 1833.

. . . . . WITH respect to Mr. Witham's discoveries I was not well assured of their correctness when my account of vegetable fossils passed through the press. Admitting that trees occur in the coal strata, their appearance is so rare, and the number of species or individuals so small, compared with the other fossil species, that they may be regarded as exceptions; still, however, it is an interesting fact, as showing that even in early geological epochs the condition of some parts of our planet bore a resemblance to the present one. But this again makes it more extraordinary that the animal remains should be wanting. For if there were land with trees somewhat like the present, where are the animals that inhabited this land? Up to the present time no remains of terrestrial mammalia have been found in the secondary strata, except the little creatures at Stonesfield. Now if the sea has not been dredged as Mr. Lyell boasts, yet the beds of ancient seas have been repeatedly laid dry, and are exposed to our observation, and surely some remains would have been found, but none have been; and I think it very unfair to argue that we don't know but what they may be found, and therefore we may conclude that perfect terrestrial mammalia did abound in the secondary epoch, when the ancient world was in every way as perfect as the present one. When such remains are found in strata below chalk, it will be time to change our views on the subject. My fourth edition has had a more courteous reception at its birth than the third. Professors Buckland and Sedgwick, both sent me their congratulations and approbation, and Professor Jameson, who was formerly much offended by my attacks on the Wernerian system, wrote to my publishers saying that he considered it one of the best English books on geology. Professor Buckland also told a gentleman whom I knew, that it was decidedly the book

he should choose to place in the hands of his pupils. . My third edition received its first approval from you five months after its appearance.

With respect to publishing any part of my letter of November last, I really do not recollect on what subject it was that I made any observations worth a place in your Journal. I might immediately recollect if the subject was named. . .

FROM MR. BAKEWELL.

HAMPSTEAD, *July* 16, 1834.

. . . . . I AM sorry to observe that you have to tell your readers that your Journal fails in subscribers. I have no hesitation in asserting that it possesses much more interesting matter than any of our English scientific journals which, as you justly observe, are on the decline in number, and I may add in value. If your Journal declines in sale, I will freely tell you the cause, — you do not endeavor to make it sufficiently suitable to the market you have to supply. You are more anxious to obtain the approbation of a few scientific readers, than to excite and gratify the curiosity of those who are most in want of information. This is a rock on which our best journalists and lecturers generally strike. They think only to please the few purchasers who are full and disregard the many purchasers who are empty and hungry.

William Nicholson began the first Scientific Journal in England about 1800. He was a superior man, and in many respects well qualified for such an undertaking, but he aimed too high for the then state of information, and Mr. Tilloch, greatly his inferior, began the "Philosophical Magazine," conveying much information, useful to artisans, surveyors, and half-informed people, and he soon took the lead in the sale very much. I knew them both; the latter had few pretensions to science. Our present Journals are sleeping, trading concerns, borrowing from foreign Journals

often without acknowledgment. . . . . When I say your Journal is not exactly suited to the United States, I think it has been formed rather too much on our English patterns, which however are not themselves suited to the general taste of the English reader. The Journal of our civil engineers is the kind of book that America wants, and I apprehend its information might be combined with more scientific articles. The Journals in France have also decreased lately, I mean of course the scientific ones. But I am afraid I have tired you with hints and queries that may be of little use.

FROM MR. BAKEWELL.

HAMPSTEAD, *July* 28, 1836.

. . . . . GEOLOGY is in a rather strange state in England at present; the rich clergy begin to tremble for their incomes, and seek to avert their fate by a revived zeal for orthodoxy, and are making a great clamor against geology as opposed to Genesis. I have no doubt this is the prime cause why Buckland's Bridgewater treatise, though announced and reviewed in the "Quarterly" last May, has not yet appeared. I have no doubt the reviewer was ——— who at the bottom hates Buckland cordially, as I am informed by Mantell. The reviewer brought forward all those points which Buckland would have been glad to pass *sub silentio*, — namely, that B. had now given up the Noachian deluge, so far as it was to explain any geological phenomena, and also stating how much he differed from the literal account of creation in Genesis. Oxford, where B. resides, and is a Canon, has been thrown into a great ferment about Dr. Hampden's free opinions, and the geologists have come in for a share of the censure. In England the attempt to introduce new names and new theories is sinking geology in the opinion of well-judging people. The Eocene, Miocene, and Pliocene, these names, as Sedgwick says,

with Greek heads and French tails, are absurdly introduced, as they assume the truth of a theory that cannot be proved, — that the age of tertiary strata can be determined by the proportions of recent and extinct shells. During the inundations and changes which took place in the epoch of the tertiary strata, the fossil remains of distant parts were much intermixed. Indeed, all the little differences of form, which make cabinet geologists believe shells belong to different species, are often exceeded in the present day by removing the animal into a new situation.

FROM MR. BAKEWELL.

HAMPSTEAD, (near London), *February*, 1838.

MY DEAR SIR, — Having for the last three months been engaged in the publication of the fifth edition of my "Geology," I have scarcely written to any of my friends, except through the medium of my good secretary, Mrs. B. The mechanical labor of writing is a greater fatigue than formerly, and I find that one subject, when I enter heartily into it, is like Aaron's serpent, it swallows all the rest; but this is a constitutional habit of mind. I have long been desirous of writing to you to thank you, first, for a very kind letter I received from you long since, and for your kind attentions to Mr. Wood, who appears to have received more gratification from his introduction to you than from almost any introduction in the United States. My fifth edition is about two thirds through the press. I am sorry to say that it will be larger than the fourth, considerably, — by about eighty pages. There is one new chapter on a subject which has hitherto been neglected by all geologists, myself among the rest, although it has been admitted to be one of the most extraordinary phenomena that geology presents. I have not told any of my friends here what it is, there is such sharp work in catching up and appropriating any new observations or discoveries; but I will inform you

what the subject of the chapter will be, or rather is, for it has passed the press,—"On the disappearance of the Coal Strata, raised above the surface by faults." It is a universal fact in all the English coal-fields, that whatever disturbance of the strata there may be under the surface, whether a series of strata be thrown down or raised up one hundred or a thousand feet on one side of a fault, the surface on each side will be on the same level; the upreared mountain has by some unknown cause been carried away, and has not left, as Shakspeare says, a reck behind (or more correctly, what Shakspeare certainly wrote, a "reek" or vapor, this being still the North Country name for smoke). Where is the mountain gone to? or what monster has devoured it? The universality of the fact seems to have prevented further inquiry. . . . . I am afraid our friend Mantell is in a world of perplexity, both respecting his removal from Brighton, and the deposit of his museum. The leading members of the Brighton Institution now decline having anything to do with it. I always told Mr. M. that if he could get £2000 clear of all further trouble, he should take it; he has before received £1000, or a gratuity from the late Lord Egremont, which would make £3000. I have seen something of the fate of museums; after the first year or two of their popularity they become flat and stale to the public, and unprofitable to the proprietors. I hope the affair of Canada will not lead to a breach of friendship between England and the United States. But I fear the whole of the civilized world is upon the eve of some great commotion. There is something wrong in the state of society, and the extreme inequality of the rich and the laborers, in almost every part of Europe. But my paper tells me to conclude. Believe me with great esteem,

Yours, very sincerely,

R. BAKEWELL.

FROM MR. BAKEWELL.

HAMPSTEAD, (near London,) *January* 8, 1839.

MY DEAR SIR, — It gave me great pleasure to receive a letter from you about three weeks since. Mr. Victor Audubon, who will take this to you is, as you perhaps know, the son of Mr. Audubon, the American Ornithologist, whose descriptions and drawings have been most favorably received in England and Europe, by our learned societies and by intelligent naturalists and patrons of science. Mr. Victor Audubon is a maternal grandson of my late valued relative, Mr. Wm. Bakewell, once, I believe, of New Haven. I believe him to be a truly worthy and ingenious young man. I have now known him for several years. In reply to some of the observations in your letter, I am pleased to hear of the vast accumulation of coal and iron in Maryland. The United States present such extensive fields for the exertion of civilized man, that imagination toils in vain to delineate the vast accession of moral power and happiness that a few centuries hence may present in your hemisphere. You say that there are no faults in the Maryland coal-fields, but as faults do not make themselves known at the surface, they can only be ascertained by many operations which, I presume, are yet on too limited a scale, to have discovered them if they exist beneath the surface. In some coal-fields here you may walk over beds of coal six hundred feet or more below the soil, and yet, a few steps further on, upon a horizontal plane, the same beds are not forty feet beneath you, and you have no indication of any displacement visible above ground, as stated in my ninth chapter. In your Ohio and Pennsylvania coal-fields, intersected by rivulets and ravines, the regularity of the beds, on each side of the ravine, shows that there has been no fault, but merely an excavation in the strata from above, — as described in your Journal, — and the same may be the case in Maryland. Since publishing my fifth edi-

tion, I have given myself a temporary holiday from geology, and have not read a single book, not even Mantell's "Wonders," which he sent me, nor have I seen a copy of Mr. L.'s "Elements"; but M., who is a great admirer of L.'s system, writes me, "that the new book is properly a supplement to the old one, and by no means what the title indicates, a book for beginners, though there are some good things in it." These are exactly his words. My health, the latter part of last year, was much better than in the previous year, but the late weather has been severely felt by invalids here, and I have been very unwell for the last month, having had returns of incipient dizziness, with severe attacks of flatulence and indigestion, though I am very careful respecting my diet. Mrs. Hannah More allows of two evils in the world, — sin and bile. I think she might have admitted wind into partnership. Cowper, in his interesting letters, mentions a religious friend at Huntingdon, who kept a diary, and the most frequent items in it were thanksgivings for delivery from wind. Cowper observes that this diary was more rational than that of the great Dr. Johnson, who makes frequent entries of the lumps of sugar which he left out of his tea and coffee on saint-days and fasts. I am quite satisfied that many cases of demoniacal possessions, mentioned by heathens and Jews, were cases of obstinate flatulence; everything which could be heard and felt, but not seen, was with them spirits.

My astronomical friend here, Mr. Holford, who had a splendid observatory, including the very best instruments, died a fortnight since, after a short illness; he was a few years my junior. My health, for the last two years, has prevented me from observations of the heavens. I could have wished to delay writing till I was better able, but I cannot resist the opportunity of sending by Mr. V. A. I mean, however, to write you more fully very soon, and if I do not write to Robert,* by the conveyance, please to tell

* His son, residing in New Haven. — F.

him that I find writing a fatigue. Believe me, with every kind wish for your long enjoyment of health and usefulness,

Yours, very sincerely,

ROBERT BAKEWELL.

P. S., January 9. — The important paper on the law of storms, first published in your Journal, has not been entirely overlooked in the late discussion on that subject in England; but it has not had justice done to it. When I first read it, I told a gentleman who was about writing on the subject, that I was well persuaded the writer of that article had discovered a most important fact, and directed, but in vain, his attention to the subject. It appeared to me, as soon as I reflected upon the article, that it was scarcely possible for great agitations to take place in the atmosphere along longitudinal lines, but they must move in eddies more or less elliptical. Water-spouts and local whirlwinds, I believe to be electrical phenomena, particularly the former. When a boy, my attention was turned to the subject by a remarkable water-spout, near my mother's residence, at Nottingham, of which I published an account in the "Gentleman's Magazine," about 1782. I was then fifteen years of age, and I sent a long theory with my narrative, which they (properly I have no doubt) omitted. Observations and reflection have, however, convinced me that the leading heads of my electrical theory were true. This account of the water-spout was my first essay in print. Have we any further information of the periodical appearance of luminous meteors, of which the first account was given in your Journal? My dear sir, you do me too much honor in wishing to have a copy of my portrait, but I have no portrait to copy from. My features may be called regular and open. I have always preserved an appearance of youth not corresponding with my years. My brother was only seventeen months older than I, but when I lived with my mother, and was then twenty-one years old, my brother

was supposed, by strangers, to be my father; and my first wife has been mistaken for my mother or aunt. If I had a portrait I would send you a copy of it; some attempts have been made to take my picture many years since, and the map of my face may have been laid down correctly in latitude and longitude, but the expression, depending so much on the state of my mind, was entirely wanting to give a true character. When I was about twenty-six, a painter took my likeness, with that of a particular friend, and I believe it to have been correct, as far as features alone could make it, but it has the look of a school-boy not satisfied with his exercise. It is still in the possession of my friend in Yorkshire. Neither my son Robert nor William, who is about to visit America, have much of any resemblance to me. The celebrated Wm. Godwin, about three years since, met my son William in London, and said to him, "Pray, are you Mr. Bakewell the father, or Mr. Bakewell the son, for I really cannot make out which you are?" William, my son, having dark hair, it became gray very early, which, of course, made him appear older than he was.

As the United States had the merit of first making steam available successfully as a locomotive power, I have some thought of sending you (if my health permit) a short essay for your Journal, on what I call a railroad for thought, by which people in distant regions may communicate with each other with very little difficulty.

FROM MR. BAKEWELL.

HAMPSTEAD, *March* 7, 1839.

. . . . . A MAGNIFICENT geological work, full of plates, sections, maps, and outlines has recently been published, — price eight guineas and five crowns to subscribers, — by Mr. Murchison, a gentleman of fortune, whom next to Professor Sedgwick, I consider one of our best practical geologists. It is a labor of seven years. In 1811, when I announced my first practical investigations of an unknown district, I

visited Shropshire and Radnorshire, and was then convinced that there was a vast extent of what may be called a transition country, that had never been noticed by Werner and the wise ones of that time. Some of my observations I communicated to Dr. Henry, Dr. Holland, and Mr. Greenough,* and gave a short notice of the country in the first edition of my "Geology" in 1813. The latter observations were carped at or disputed by Conybeare, and I have never since had the opportunity of reviewing the country attentively, or even visiting the greater part of it. Mr. Murchison's views confirm all my first conclusions. His work is entitled "The Silurian System," (a name I do not much approve); it comprises the regions occupied by the ancient Silures (a British nation). The great basis of the country is "transition" between the coal and the most ancient slate rocks, comprising also several coal-fields and insulated portions of secondary formations. This country is singularly broken by the protrusion of remarkable igneous or volcanic rocks of whose nature I had little doubt; but Dr. Holland, whom I showed specimens to in 1811, although he was just returned from Iceland, declined to give an opinion. I had then never seen a recent or acknowledged volcanic rock *in situ*. Mr. Murchison has kindly presented me with a copy of his work, and *if my health and strength permit, I will send* a review of it for your Journal (which will probably be the last labor of mine in geology). . . . . I don't know whether Dr. M. has enclosed you a little tract of Horace Smith in favor of railroads. In the conclusion, he says we have been all travelling upon a fine locomotive system, from the day of our birth, 68,000 miles per hour; the comparison with railroad speed is striking, yet how few think about it! Mr. Hazlitt said, justly, the discoveries in astronomy have compelled bigots to lengthen Jacob's ladder. Indeed, such

* Greenough set off immediately to Radnorshire, but brought back nothing but doubts and puzzles.

persons ought to abhor astronomy much more than geology, which only relates theologically to a question of time on one subject. But I must conclude, with sincere regard,

Yours very truly,

ROBERT BAKEWELL.

P. S. On the 10th of this month I believe I shall stand on the seventy-first arch of the bridge.

FROM MR. BAKEWELL.

HAMPSTEAD, (near London,) *October* 30, 1839.

. . . . . I HAVE often thought of what I mentioned in a former letter, — the formation of a simple universal language for correspondence among all Europeans and their descendants. I believe it might easily be practised and learned, and serve also as a commodious short-hand for all nations. I hope I shall be able to explain the introductory principles, and leave it to be worked out by yourself, or some of your compatriots who take the lead in useful inventions. What think you of the insect-tree lately discovered in South America,—see the "Athenæum," number for October. We have something analogous in the animalculæ swimming with great activity, and then fixing themselves and becoming vegetables. Young sponges, too, are described as extremely frolicsome for some time, before they grow steady and fix themselves to one place for life. The whole of animal and vegetable life is truly marvellous; the propagation of species by common natural laws is as wonderful as their instant creation out of nothing could be, or that an oak should, at a certain state of its growth, become a man. Take an egg in your hand for the first time; could you believe that it would become an eagle? To return to Mr. M.'s book. I exceedingly regret that my health will not allow me to do it justice in a review. I believe I told him it was my intention to send you an account, which I am not now equal to.

I am anxious about Dr. Mantell. I have not seen or

heard of him since his son sailed for New Zealand in September. I wrote to him last week; but have not yet had an answer; during the summer he said he had a decided formation of pus on the lungs, but when he was last here he seemed in his usual state of health. Excuse, my dear sir, this rambling letter, and believe me, with sincere regard,

Yours most truly,

ROBERT BAKEWELL.

CHAPTER XIX.

COLONEL TRUMBULL AND HIS PAINTINGS.

Professor Silliman's Acquaintance with Colonel Trumbull. — His interview with Colonel Trumbull, in 1830. — Purchase of Trumbull's Paintings by Yale College. — Colonel Trumbull on his Portrait of Washington. — The Battle of Trenton. — The Battle of Bunker Hill, and General Warren. — Anecdote of Colonel Small. — Painting of the Battle of Princeton. — The Death of General Mercer. — Anecdotes relating to this Painting. — Anecdote of General Mattoon and Colonel Trumbull. — The Surrender of Cornwallis.

It was mainly through the exertions of Mr. Silliman that the historical paintings of Colonel Trumbull, as well as the building in which they are deposited, were procured for Yale College. The artist himself was an inmate of his family during several of the closing years of his life. It was at Mr. Silliman's request that he composed the volume of "Reminiscences of his own Times." Respecting him, and the productions of his pencil, Mr. Silliman has left a small manuscript volume of interesting anecdotes, from which the remainder of this chapter is extracted.*

The Trumbull Gallery, and the Artist its Founder. — Col. Trumbull was already a man in full life, twenty-three years

* The papers of Colonel Trumbull scarcely contain materials enough to warrant a separate publication. Yet curious and valuable letters are found among them. Some of these — letters from John Adams, Jefferson, Lafayette, Benjamin West, and Lord Grenville — are printed in the Appendix to this Memoir.

old, when I was born, and was approaching his meridian while I was still a youth. As I came into early manhood, I heard his praise from eminent men, — President Dwight, Hon. James Hillhouse, and others; for his country was proud of him; and his fame, as a soldier of the Revolution, and a friend and aid of Washington, his celebrity as an artist, were cherished at home, and especially in his native State of Connecticut. It was, therefore, no small gratification to me, and was felt to be an honor, to form his personal acquaintance. Colonel Trumbull had been many years in England cultivating his beautiful art, and having married a lady of that country, when he was already in middle life, he brought her to America, and early made, with her, a tour to Quebec.

My first interview with Colonel Trumbull was in one of the public rooms of Yale College, in which institution I was then a tutor. It was, I believe, in October 1801, during the autumnal session of the Legislature, when his distinguished brother, Jonathan Trumbull, Esq., was in attendance, as Governor of the State. He came to the College with Colonel and Mrs. Trumbull, and I was introduced in the old Philosophical Hall, over the former chapel, now the Athenæum. The brothers were elegant, graceful gentlemen, of winning manners, and their familiarity with each other, manifested in little sallies of wit, was pleasing to me, who had regarded them only as grave, dignified men. A picture of their father and mother was hanging on the wall. The original was painted by Colonel Trumbull, and this picture was a copy by a young artist.* It soon caught the attention of the brothers, when the artist said, referring to the wig and curls on his father's head, — "Ay, that looks like a governor, not like this little queue of yours," at the same moment playfully taking it up, and shaking it between his fingers, much to the Governor's amusement, and to my surprise.

* Mr. Fitch, of Lebanon.

Ever after my introduction to this distinguished man, he treated me as a friend, and, when in 1804, I was preparing to visit England, he gave me valuable letters of introduction, and still more valuable written instructions, as to life in England, and especially in London, embodying the results of his own long experience of twenty years. In fact, my acquaintance with him ceased only with his life, although our intercourse was mainly suspended during a prolonged absence of his, in England, caused chiefly by the war of 1812 to 1815. In the mean time, I had been married to his niece.

The idea of depositing his paintings at New Haven, was first broached in a conversation with Professor Silliman.

When returning from a journey in 1830, I called upon Colonel Trumbull, at his lodgings, at Miss Lentner's, corner of Walker Street and Broadway, New York, it being my habit to pay my respects to him when I was in the city. The house was large, the apartments spacious, and two contiguous parlors, of uncommon dimensions, were adorned by the paintings of Colonel Trumbull, which were advantageously suspended all around upon the walls. I had seen many of them singly before, but had never seen them all together, and some of them never before. I was, therefore, strongly impressed and delighted by this unexpected vision, and had the good fortune to find the venerable artist in the midst of his treasures. Friendly salutations were followed by fuller explanations of some of the subjects than I had before received; but I was sorry to find that the great artist, at seventy-four years of age, was in a position far from eligible, and although surrounded by the splendid productions of his own skill, talent, and taste, he was without a sure foundation, upon which he might repose in the evening of his life. . . . . It might be indelicate in me, to report his

painful remarks, made in the confidential interview, of which I am now writing. He then lamented his poverty in manly, but energetic and eloquent language, which painfully touched my feelings. The very expressions which he used, and his energetic action, are still with me, vivid as at that moment. It was a painful one, and was ended, for the time, by a question from me, and an answer from him. Referring to the paintings around us, which he stated were his chief resource, I said: "And what, sir, do you intend to do with them?" He instantly replied, "I will give them to Yale College to be exhibited forever for the benefit of poor students, provided the College will pay me a competent annuity for the remainder of my life." "Are you in earnest, sir?" "Certainly I am." "Am I then at liberty to go home and act upon this suggestion?" "You are at liberty, and I authorize you to say so for me." "The proposition, sir, is as grateful to me as it is surprising; I will return then, forthwith, to New Haven." I came back resolving, like Colonel Miller, at Lundy's Lane, that I would try.

Our President, the Rev. Jeremiah Day, and my immediate colleagues among the older members of the College Faculty, as well as the officers of the fiscal department, were men of liberal minds, and I found no difficulty in exciting in them a lively interest and a strong desire to obtain the prize that was thus remarkably offered to us. It was true that, being as yet without authority from the College Senate, the Corporation of the Institution, we had no power to make a binding contract; but we did not hesitate to proceed in preparing the case, not doubting that we should be sustained.

We pass over the circumstances which attended the purchase of the paintings and the establishment of the Trumbull Gallery in connection with Yale College. Professor Silliman led the way in the efforts which secured this result. His comments upon the

contents of this collection will be read with interest.

Portrait of General Washington. — The artist thought this to be the best of all his portraits. Colonel Trumbull informs us that this portrait was painted for the City of Charleston in 1792, but that they preferred to see Washington in his civil character, just as they had recently seen him in his visit to that city. For this preference we have reason to be grateful. I saw the Charleston portrait in a public hall in that city, in February, 1845. It is far less interesting than the military portrait in the Trumbull Gallery. In the latter picture the perilous crisis and the lofty decision which it produced, are happily expressed in the countenance of the General, and his noble figure stands out in full relief upon the canvas. Colonel Trumbull, when we were looking at the paintings, said to me: "You may assure your young men that they here see *the General Washington of the Revolution*, exactly as he appeared at the head of the armies, when he was in the meridian of life. The height of the figure is six feet two inches, which was exactly his stature. His person, his spy-glass, his dress, and all the appendages, even to his hat and gloves, are faithful copies of the originals, and there is no other portrait existing which does justice to his military appearance and character." "My first painting of Revolutionary events," added he, "was the Battle of Bunker's Hill, on which occasion there were no horses, — the officers being all on foot. The English, who had no conception of a battle without horses, when they saw this painting at the annual exhibition in Somerset House in London, said: 'Does not this American painter know what a horse is!' In this painting of Washington, I answered that question." The horse, startled by the cannonade, is firmly held by the soldier-groom, and is an appropriate companion of Washington, who had always the finest horses; he was a

fearless, graceful, and skilful rider, and when on horseback his appearance was magnificent. At Mount Vernon, his groom said to Mr. Daniel Wadsworth, that the only objection he had against General Washington was, that he "*would* come every morning to the stables, and see with his own eyes the condition of the horses, and know that they were well cared for." It will be remembered that the sketch in the field-ground of the portrait is the cannonade in Trenton, January 3, 1777, at the stone bridge over the Assunpink River; the time was about sunset, the evening before the battle of Princeton. The advance of the army from Princeton had been vigorously opposed by the patriots through the preceding day. All along the road, especially at Maidenhead (now Lawrenceville,) and along the margin of the river, and on to Sabbakong, near Trenton, and even in the entrance of the town, the British army was kept in check, and experienced heavy loss. It was said that they lost one hundred and fifty men. In Colonel Trumbull's picture, the rays of the setting sun have gilded the limbs of an old leafless tree, — it being winter. The cannonade at the stone bridge prevented the enemy from passing over to storm the American camp.* Being in Trenton in 1823, I conversed with an old gentleman who was present on that occasion. We were at the moment in his garden, on a rising ground, and he said to me: "Here General Washington sat on his horse, on the very ground where we now stand, and I heard him say, during the cannonade: 'Give them plenty of grape.'" This was justly regarded by the artist as the crisis of the Revolution and of Washington's fame. . . . . This painting is invaluable, and its value is enhanced by the uniform testimony of contemporary American officers with whom I have visited the Gallery, and who have declared that the portrait is a faithful likeness of General Washington in his grand-

* See an interesting summary of these events by C. C. Haven, Esq., Trenton. 1856.

est and most interesting attitude. The portrait was painted at Philadelphia from the living original, during his first Presidency, in 1792. . . . . At Fredericsburg, where he spent his early youth, and where I passed some weeks in 1836 with my son and Mr. Eli Whitney, they related many anecdotes of his childhood and youth, but none that were marked by sin or folly. Here, also, is the house in which his mother lived and died; and we saw at the Rev. Mr. McGuire's, in the possession of his lady, the silk velvet coat which Washington wore at the ceremony of his first inauguration as President, at New York, in 1790. A small triangular piece had been cut out of the skirt and carried away as a relic. It was done by Le Vasseur, the private secretary of Lafayette, during a visit of that friend of Washington in 1824, — the ready scissors of Le Vasseur being slyly drawn from his pocket for the purpose. The theft was not discovered until the party were gone, and it was not difficult to pardon it. This is the coat that is painted in Stuart's picture, which exhibits Washington in a civil capacity, in the evening of life, in a totally different costume and association of circumstances from those of the military era; and the expression of his face is altered by a recent set of artificial teeth, pressing the lips unduly outwards. We may presume that the art of making and setting artificial teeth was then in its infancy in this country, and even in Europe. These circumstances will account for the difference between the portraits by Trumbull and Stuart. Both, we believe, were excellent likenesses at the time they were painted.

The Battle of Bunker's Hill, June 17, 1775:— . . . . .
The late Dr. John C. Warren, the eminent surgeon, of Boston, had at his house an interesting portrait of his uncle, and a large historical picture, showing General Warren on horseback, guiding the provincials to the battle-ground in Lexington, where some of them were already engaged with the British troops. I saw these pictures at

Dr. Warren's house, and there he showed me also a book of prayer and hymns, which was in the pocket of his uncle when he fell. It was taken to England by a British soldier, and a benevolent clergyman there purchased and transmitted it to the family friends in Boston. It is still in good preservation. In my last interview with Dr. John C. Warren, two or three years ago, at his house, he showed to me and my companion the skull of General Warren, and also the skull of his own father. They were cleaned as bones usually are when prepared for an anatomical museum. General Warren's skull having been perforated by the ball which killed him, the hole, as we saw it, was well defined. He fell as our troops were returning, and the ball was found in the skull. Dr. Warren remarked that probably this skull might be wanted again on Bunker Hill. I suppose that he alluded to its expected association with the monumental statue which we had seen in the studio of Mr. Dexter, the sculptor, in Cambridgeport, and which has been recently established, with imposing ceremonies, on Bunker Hill. He gave no solution of his having disinterred the skull of his own father, with whom, more than fifty years ago, I passed an agreeable and instructive evening at his house in Boston. Now the eyeless orbits, the speechless mouth, and the vacant skull, once belonging to a great man, could assign no reason why they were evoked from the tomb. Was it in sympathy with that ultra-professional feeling which induced the late distinguished surgeon to order in his will, regardless of family claims, that his own body should be anatomically prepared and placed in the anatomical museum? which was done accordingly. General Warren was buried first, I believe, on the battle-field, then in Park-Street Cemetery, from which his remains were disinterred by his nephew, — I suppose, as remarked above, for monumental commemoration. . . . . It will be remembered that in the battle of Bunker's Hill the British troops were twice repulsed with great slaughter.

When they returned the third time to the onset, Colonel Small found himself almost alone in front of the patriots, his soldiers having been shot down around him. At that moment he saw several Americans levelling their pieces, apparently at him, and knowing that they were marksmen, he already considered himself a dead man; but at that instant his old friend Putnam rushed forward, and with his sword knocked upward the American guns, exclaiming at the same time: "My dear fellows, for God's sake don't shoot that man, — I love him as I do my own brother!" Major Small bowed and waived his sword in acknowledgment; and the day after the battle, he obtained a flag, and went over to the American lines to thank his generous friend for saving his life. When Major Small was standing in London to be painted for his picture, he related this occurrence to Colonel Trumbull, who, in presence of the painting, related it to me. . . . . The late Colonel Chester, of Wethersfield, commanded on that day a volunteer company of young men drawn from his own town and the vicinity. They were among the troops that manned the lines of rail-fences and hay stretching from the redoubt to the Mystic River. A large and powerful man stood by the side of a pale-faced youth of slender figure, when, within the hearing of Captain Chester, the athletic soldier said to his comrade: "Man, you had better retire before the fight begins; you will faint away when the bullets begin to whiz around your head." The pale-faced man replied: "I don't know but I shall, as I never heard one; but I will stay and see." Colonel Chester, from whom I received the story, told me that he observed the pale man doing his duty in firing and loading with cool deliberation; but the boastful man of muscle and bone, but without moral courage, was missing, and was afterwards found alive, unharmed, as he was secreted under a hay-cock.

Death of General Mercer at the Battle of Princeton.— . . . . After the fall of General Mercer, and the brief

retreat of his corps when pressed by the British bayonets, while they had only rifles without bayonets, General Washington, at this perilous moment, came up with fresh troops, rallied the fugitives, and turned the tide of battle. This is the crisis which the artist chose, and most skilfully has he wrought out the fearful drama. General Washington, as he himself stated to the artist, was here in more peril than in any other conflict, more even, he said to Colonel Trumbull, than in Braddock's defeat. Rushing at the head of his troops into the space between the two armies, the volleys of both passed by him, over him, around him, and touched him not; nor was he ever wounded either in the many battles of the old French and Indian wars on the frontiers, or in those of the Revolution. If he bore a charmed life, it was charmed by the good providence of God, which reserved him for a noble destiny in the cause of his country and of mankind.

Captain Leslie of the British Army. — At the house of Hon. Henry Thornton, M. P., in October 1805, I sat at dinner next to Lord Leven and Melville of Scotland, who inquired whether I had ever visited the battle-ground near Princeton. I answered that I had twice been there as an interested observer, when he added, with a sigh, "I had a brother, Captain Leslie, who was slain in that battle." In the picture he is seen on the right, near the dark-visaged Colonel Mawhood, his countenance pale, and his sword dropping, held only by a leathern thong. Colonel Trumbull told me that when he was painting this picture, the celebrated traveller and artist, Sir Robert Kerr Porter, came in, and Trumbull said to him: "How shall I best express the first faltering of life under a mortal wound?" He replied: "We soldiers usually wear a leathern thong or strap around the wrist of the sword hand, and in battle it is connected with the hilt of the sword, that we may not drop it, if wounded in that arm." This advice or intimation was followed, as seen in the picture.

When Captain Leslie was found among the fallen, Dr. Rush, on ascertaining his name from his servant, begged permission of General Washington, to devote himself to the dying youth, who was already past consciousness; "for," added he, "I was, when a student in Edinburgh, received almost as a son in the family of his father, Lord Leven and Melville, and I have often, when he was a child, dandled that young man on my knee." . . . . . This admirable painting fully entitles the artist to a distinguished place among historical painters, and is alone sufficient to establish his fame with posterity. It is as full of life as a scene of death can be. In one of our interviews in the Gallery, where the artist often discoursed to me and answered my inquiries, I put this question to him, as we happened to be standing near the *finished* picture of the Battle of Princeton, — "Suppose, sir, that your paintings in this gallery were doomed to destruction, and you were allowed to save only one, which should it be?" He promptly replied, "I would save this painting of the Battle of Princeton."

While Colonel Trumbull's application for a pension was pending at Washington, he was at a loss for a proper document to prove that he had ever served in the army during the Revolution. For, strange as it may appear, there were no proper records to be found. Having heard that General E. Mattoon of Amherst, Mass., was in the campaign on Block Island, against the British army that occupied Newport, and Colonel Trumbull, having himself served on that occasion, as aid to General Sullivan, the American Commander, a correspondence ensued between them and General Mattoon, fully confirmed the fact of Colonel Trumbull's service, as is fully narrated in his autobiography. This interesting coincidence brought these two veterans together in my house in the summer of 1838. Colonel Trumbull then painted an excellent portrait of General Mattoon, which was very acceptable to his children and friends,

although his vision had left him, and he could not see the picture of himself. While he was staying with us I brought from the College Library General Burgoyne's "State of the Expedition from Canada," for General Mattoon was actually engaged in that campaign. As he was familiar with the topography along that part of the Hudson, he could understand the descriptions as I read them; and by guiding his finger along over the ample maps and plans by which the work is illustrated, he readily understood the different positions of the contending armies; the patriotic ardor of his youth was revived, and he lived that perilous period over again. I called his attention to Burgoyne's last encampment, and to the house which I had visited in 1821, in which the Baroness Reidesel and her children took refuge, — at last in the cellar, during a terrible cannonade which pierced the house with round shot. I adverted to the case of the poor wounded British soldier who, when placed on a table to suffer the amputation of a shattered limb, lost the other by a cannon ball. He not only remembered the history of that house, but added, that he was the officer of artillery who, from the opposite side of the river, pointed the cannon that did so much mischief; but added that the cannonade was directed against what was supposed to be a rendezvous of British officers, and not against wounded men, and women and children. Thus, sixty-one years after the event, we had with us an actor in those scenes, still vigorous at eighty-four or eighty-five, with a mind not impaired, and a heart still warm in his country's cause. And the artist who copied his features and person was a coeval veteran of unabated power and artistic skill.

Surrender of Lord Cornwallis. — Rochambeau is on a brown horse a little detached from the group. The artist had good proof of the accuracy of the likeness of the General. It was first painted upon a hand-card, and Colonel Trumbull being in Normandy in France, as he was passing

to his chamber in the hotel with a candle in one hand, and the picture in the other, the light flashed upon it, whereupon the landlady, who was showing him his room, exclaimed, — "O Monsieur Rochambeau!" The artist replied, "Pray what do you know of Monsieur Rochambeau!" "O, did he not always lodge here when he passed this way?"

Professor Silliman thus concludes the little manuscript volume from which the foregoing passages are taken: —

I have now fulfilled a duty which I owed to the memory of the venerable man who confided everything to me, ... and I hold in higher admiration and veneration than ever, the illustrious father of American Historical Painting.

CHAPTER XX.

RESIGNATION OF PRESIDENT DAY: DOMESTIC AFFLICTION.

Resignation of President Day. — Letter of Chancellor Kent. — Visit to Boston: Agassiz. — Death of Mr. Elihu Chauncey. — Visit from Agassiz. — Birthday Reflections, (1848). — Death of Jeremiah Mason. — Visit to his Early Home. — Proposal to Resign. — Death of Mrs. Silliman. — Religious Thoughts. — Visit to Washington: President Taylor; Secretary Clayton. — His Consent to withdraw his Resignation.

While Professor Silliman was engaged in his labors abroad, he lost none of his zeal in the work of college instruction. So many years had he taught, that his pupils were now dispersed in every part of the land. On the retirement of Dr. Day from the Presidency, it was natural that some should look to him as a fit successor. His selection for the vacant office was, in fact, urged by a number of distinguished civilians. This was done the more earnestly, as it was known that Professor Woolsey was unwilling to accept the station. But Professor Silliman was only six years younger than the retiring President. Giving instruction by lectures, and during only a portion of the year, he was, of course, less at home in the details of college discipline, than if he had been in the habit of meeting the students in daily recitations. Besides, his election would have involved a departure from the uniform precedent, if not the law, of the Institution, according to which the Presidency must be filled by a clergyman. Pro-

fessor Silliman, it is needless to say, was entirely satisfied with the action of the Corporation, and rendered to the administration of Dr. Woolsey his cordial support. But he was, at the same time, gratified by various expressions of regard which he received, on this occasion, from old and valued friends, among whom were Charles Chauncey, and Chancellor Kent. The latter, under date of August 3, 1846, in a letter to Judge Baldwin of New Haven, wrote as follows: —

"I understand that at the annual Commencement, a President is to be chosen in the room of the venerable President Day, and permit me to say, that I ardently hope, that our friend, Professor Silliman, may be his successor. I do not know the man within the College catalogue, that has a better title to the honor, and who is more fitted to fill the station, with reputation to the College, and the general and warm approbation of the community. His character is pure and estimable. He has sustained his professional duties for a long series of years, with distinguished ability and success. His talents, his learning, his science, his taste, his purity and elevation of character, and his varied and almost universal accomplishments, point him out as the very person that ought to be chosen. . . . . I feel an unshaken love and attachment to Yale College, and I should deeply regret, as one of its ancient alumni, if Professor Silliman (provided he is willing to accept, of which I know nothing,) should be passed by. I express these wishes of mine, on my own spontaneous suggestion, and hope and trust you will be willing to give to the choice of Professor Silliman your effective countenance. In my humble opinion, the elevation of Professor Silliman to the presidential chair, will add diffusive renown to the College, both in this country and in Europe."

At the beginning of the following year, Professor Silliman visited Boston, where he had the pleasure of hearing Agassiz, and of meeting old friends. The annexed notices are from the "Diary," on which we must hereafter chiefly depend: —

Wednesday Morning, January 13, 1847. — In the afternoon of this day, and also on Friday evening, I attended a lecture of Agassiz, in the Lowell Institute, now holding its lectures in the Tremont Theatre, which has become a church. Professor Agassiz gives great satisfaction, and wins universal favor. The vast extent of his knowledge in all departments of natural history, his almost unexampled industry, and winning affability and modesty, make him a great favorite. His course is devoted to tracing the origin and progress of the creation of animals, from the earliest to the latest; and the fossil animals, he is able, from his extensive acquirements, to compare with the living creation. . . . . His manner is calm, dignified, and yet engaged. He uses, in general, very good English, — sometimes hesitating for a word, but generally finding the right expression.

January 17. — In Boston I experienced great hospitality and kindness, and was warmly greeted by many of my old friends; affectionately, by not a few. I dined with Warren Dutton and lady and family, and also with Josiah Quincy, Jr., and family, including his parents and Miss Sedgwick, the celebrated authoress; and everything was very agreeable. I was at a Warren Club, newly got up, and called after the Warrens; it brought together many of the distinguished men of the town at Dr. Lawrence's. There was also a *soirée* at Dr. C. T. Jackson's, — I suppose for Agassiz and myself, — and here I met many old friends, and made some new acquaintance. . . . . Among those families that gave me a warm reception were the Lawrences, the Lambs, Masons, Warrens, Bruens, Duttons,

Quincys, Blagdens, &c. It was a period of relaxation and recreation, equally grateful and useful.

Soon after, he was afflicted by the death of his old friend and classmate Mr. Elihu Chauncey, of Philadelphia, of whom he thus speaks: —

1847, *April* 11. — When he was a guest with us, less than eight months ago, and when I saw him at his own house in Burlington, N. J., September 15, on my way to Reading, and again on my return, September 23, he appeared in fine health and spirits. He and his brother attended me to the steamboat, on the morning of September 24, and there, unconsciously, I took my last leave of him. His visit with us in the summer was *very* acceptable to us. He was very cheerful, and his conversation highly instructive and agreeable; there was in him great depth and scope of thought, and his moral sentiments and affections were seated in his inmost soul. He was a playmate of my boyhood, a classmate and associate of my youth, and the warm friend of my whole life. This death comes very near to me, and I must be reminded how near I too may be to death. The circle of my early friends is fast narrowing. . . . . Mr. Chauncey has been a man of unusual wealth, and vast engagement in affairs of money. I once asked him whether there was not danger in such extensive engagements in worldly affairs, and in the allurements of wealth; he allowed that there was, but took my remarks very kindly.

An agreeable visit from his friend Agassiz is here described: —

1847, *May* 2. — He arrived at two o'clock on Monday, May 2, and was attended by his two friends, E. Desor and Count Pourtalis. They remained with us until Saturday, May 7, when they went for New York city, on their way to Albany. Their time in New Haven was occupied chiefly

in scientific reading, discussions, and excursions. . . . . There was a *soirée* at Benjamin's for them, when very considerable numbers of our most respectable literary men were present. Agassiz is a highly interesting man, — from his talents, his great acquirements, especially in natural history, his fine, open, winning manners, and a countenance both handsome and beaming with high intelligence and the kind affections, by which he is animated. He is the delight of all the societies in which he moves. He is at present in ill health on account of his great exertions in Boston, in the course of lectures, and in innumerable scientific conversations. He had been confined for a month to his bed, and for six weeks to his room. He is recovering his vigor which was formerly very great. Once, as he informed us, he could carry one man on his back, and at the same time one man under each arm; and he could lift an iron anvil which the smiths were unable to raise. We are encouraged to hope for a course of lectures from him in June, provided his health is sufficiently restored. . . . . Mr. Desor is a scientific amateur, and has for ten years attended Agassiz in his tours, &c. Count Pourtalis is a young man about twenty-one, of a titled and opulent family in Neufchatel, and also is an amateur of science. Agassiz is in his fortieth year; Desor some years younger. Agassiz speaks English very well; the others after a fashion, but can be understood, although with some difficulty. All appear to be true, amiable, and unsophisticated men, lovers of knowledge for its own sake. All of them have scaled the high Alps, and several peaks that had not been surmounted before. I was almost entirely devoted to them during the week, as were B. S., Jr., J. D. D., and to some extent the ladies of the family. I made out, however, with some difficulty, to prepare a long memorial to the Legislature—nineteen pages — on the subject of our new professorship for agriculture and the arts. It was corrected and copied, and passed to the Legislature on Tuesday May 10. The next

day I went to Hartford to support it, and had a hearing before the Committee on Education, — nine in number, the chairman included. I addressed them for about three-quarters of an hour upon the bearings of science and the arts upon the interests of society, and had a respectful hearing, and am told that the impression was favorable. This was at eight o'clock on Thursday morning, May 13.

In the following passage, he alludes to an occupation to which he gave much time in the latter part of his life: —

During the last week I have been deeply interested in the reperusal of many letters of my dear father and mother, and many of the father of my mother, the Rev. Joseph Fish, minister of Stonington. My father's letters extend through the Revolution, and also my mother's responses through very trying times and circumstances. . . . . I have been deeply affected by the perusal of this correspondence; the letters are arranged by my daughter, Mrs. H——, in a book. There is great depth and strength of affection running through them all; zealous devotion to each other's happiness, and ardent piety and patriotism. I have descended from the wise and the good, the pious, the patriotic, and the pure in heart, who, I have no doubt, now see God. I am softened and tenderly affected, especially towards my beloved parents, who were noble people. My father I well remember, although only eleven years old when he died, (July 21, 1790,) in his fifty-eighth year. My precious mother survived him twenty-eight years, having died at Wallingford, July 2, 1818, aged eighty-two years. I had long and tender intercourse with her, and she was often in my family, and it would have been my wish to have had her there always. I have great satisfaction in having recently had her portrait restored by Jared Flagg, from a portrait by Moulthrop, — the latter a good likeness, but not

a good picture. As copied and improved by my suggestions, it is my own blessed mother at fifty-seven to fifty-eight years old, almost returned to life again. She has the same smile and glow of maternal love in her bright face, with which she was wont to meet us (my brother and myself), when we came home from college.

Religious reflections, to which he was never a stranger, become more and more frequent in his Diary: —

1848, *April 21st.* — This is Fast-day, and brings a welcome day of repose and reflection, amidst the agitations of a busy world. We have always occasion enough for humiliation and penitence, especially when we realize how insufficient are our resolutions, how imperfect our obedience, how frequent our transgressions. The decided conviction of my own mind is, that we cannot depend upon ourselves for salvation. All our obedience is due from us, as much as if it were to be the ground of our acceptance, and it is the only proof which we can present to ourselves or others that we are really Christians; but it falls so far short of the standard of God's moral law, that we must rely upon a righteousness not our own for our justification, and that righteousness is Christ's. This is a good custom of our ancestors to call the people off one day in a year from their ordinary employments to consider in a more thorough manner than usual their great spiritual interests.

On entering upon his seventieth year, he wrote as follows: —

August 8th, my Sixty-ninth Birthday. — It is a solemn period of life when one enters his seventieth year. This is now my case. But I cannot say with old Jacob, that my days have been few and evil. Upon the reduced scale of human life, my days have already been many, and they

have not been evil. Afflictions have indeed been scattered along my path of life, but they have not been more than were good for me, and my sources of happiness have been numerous and rich. I bless God for the large measure of happiness which I have enjoyed, — as much as is best in a state which is mutable and transient. What I sigh for is not riches, honors, or pleasures. Riches I have never sought, they have not entered into my views of life, but such income and emoluments have followed my professional efforts as have afforded all needed supplies; honors I have not coveted, but a fair reputation from honest efforts to perform my duty, however imperfectly done; and as to pleasures, the moral and intellectual have surpassed the physical. A cheerful temper and active temperament have made life grateful to me; and I have ten thousand blessings for which to thank the Father of mercies, while I feel that I cannot be justified before Him by any works of righteousness which I have done, but infinitely need the shield of His mercy through Christ the Redeemer of men. What, therefore, I most earnestly desire is a holy heart and a holy life exempt from temptations and sins. I have still firm health and cheerful courage and energy in the performance of duty. A large, happy family clusters around me, and my dear wife is still spared to them and me, although she has been frequently threatened, and many dear friends have been called away from us.

His circle of friends was so large, that a death among them was now no unfrequent occurrence. Of one of them, Hon. Jeremiah Mason, he thus speaks: —

My friends are fast assembling in the other world. Mr. Mason was a native of Lebanon, Conn., and a graduate of Yale College, in 1788, in the same class with Rev. Dr. Chapin. He (Mr. Mason) with Hon. Jeremiah Smith of

Exeter, New Hampshire, and Hon. Daniel Webster, vindicated the cause of Dartmouth College, and of all similar institutions. I first knew him at Portsmouth, New Hampshire, in 1818, (July, I believe,) where he then lived. I was going to Portland and Brunswick, to attend the Commencement of Bowdoin College, when Mr. Ticknor offered me a letter of introduction, which secured me a very kind reception, and I have ever since maintained a very friendly intercourse with Mr. Mason and his family. He was a lineal descendant from Captain Mason, who destroyed the Pequot Indians. He was a noble man, and as Mr. Clay said of him, very truly, a giant in stature and a giant in mind. His height was not less than six feet six inches, and his person large in proportion. His mind took a wide range of observation, and his conversation was, in a high degree, instructive and interesting, with a winning amenity of voice and manner. On my return from Hanover, I was at Mr. Mason's for half an hour, Friday evening, September 29, and then had my last interview with him and his lady and daughter. I thought him somewhat more marked by age than when I last saw him, which was, I believe, two years before. I did not view him as near to the close of life, although he lived only fifteen days after that time. I suppose him to have been a religious man. During my Lowell courses, I called there late in the evening to bid him farewell, and found him engaged in his family devotions. His family have been favored by his continuance with them to a good old age, fourscore, — and I think it a privilege to have known him.

Those who have followed the course of this Memoir from the beginning, will be interested in his account of a visit to the home of his childhood.

December 1, 1848, *Friday.* — At eight o'clock, A. M., my daughters, Mrs. Church, Mrs. Hubbard, and her husband,

Professor Hubbard, my son, B. S., Jr., and his wife, and young William Silliman Hillyer of New Albany, Indiana, grandson of my elder half brother, with myself, left home at eight o'clock, A. M.; the depot at eight and three quarters, on the rails of the New Haven and New York road, and were at Bridgeport, eighteen miles, before ten o'clock. Here, by previous arrangement, carriages were ready, and we all proceeded three miles, by old Pequamoc, noticing by the way interesting objects, as the site of the old school-house, now removed, where my brother, G. S. S., and I, were taught the elements of knowledge; also, Knopp's mill, one mile from my father's mansion, where was formerly our grinding-place; the place also for washing sheep, and a considerable fishery of alewives by the seine. We next saw the beginning of my father's land, in the duck-pond pasture, a tract of probably seventy acres; there were seven tracts of land, — one of them the homestead, — and six others in different places, some at from one mile to four miles distant. As we went up the hill, I pointed out the spot where they found me, a little wanderer, of two years old, strayed half a mile from home, lost for the time, — looked for anxiously in the well and in many other places, — but found at last, sitting quietly on a stone by the bars, where the cows were put into the pasture. I showed also the field where my father's fine bald-faced horse lost his life, after surviving the battles of the Revolution, in several of which he had been rode: the servant went down, on a Sabbath morning, to lead him up for service, as we lived two miles from the town, but we found him with both fore-legs broken short off. He had stepped into a crevice between the two contiguous portions of a fissure rock, and had fallen sidewise. . . . . The old house, formerly my uncle Ebenezer's, and built by him, being the elder brother of my father, was sold to Mr. Eliot, after the burning of Fairfield, in July, 1779, who, under my father's influence and patronage, removed to Holland Hill, Mr. Eliot's house

having been burned by the British troops. In this old house, fifty-seven and fifty-eight years ago, my brother and I were prepared for college. We went up into the chamber where we used to recite, and saw the very spot on which stood Mr. Eliot's bookcase, containing beautiful volumes which he had saved from the conflagration of Fairfield, and which he frequently dusted with great care, as he would trust no one else to do it. . . . . We went to the good old mansion of my father. We passed the same little bridge, made of a single flat stone, laid over a brook, dry in summer, but occasionally filled by the rains and snow floods. That bridge was often passed by me when a child, and I was delighted to find it there, and also another little bridge, over another transient brook, nearer to the house. I had sent a note to Mrs. Penfield, the present occupant, apprising her of our coming, and she and her daughter were ready to receive us, and treated us with great cordiality. We went through the house, and I told my children many interesting things of early days. The house is, in the inside, unaltered in the most material things: the two best rooms are almost exactly as they were fifty-six years ago when my father died. The best chamber is entirely unaltered; the same Prussian blue paint on the woodwork of this chamber, and the panels and all, without shrinkage or injury of any kind. There is the same sky-blue paper, of small figure, on the walls, and the same narrow boards of white-wood or tulip-tree in the floor; the same deep closet where my father's arms were kept, with a wig of my grandfather Silliman. A barrel of hickory-nuts was always kept there, and on opening the door we found a pile of the same sort of nuts. In this chamber, our dear mother had a season of retirement with us, her two younger sons, in the morning after breakfast, to hear us read the Bible, and instruct us in its contents, while she combed our hair and prepared us for school. I have repurchased the same large family Bible, which was then in

fine order, and lay upon the table in that room. It was sold at the general sale of effects, when my father's estate was settled, but its place was traced out a few years ago, and, although injured, it was repaired by the kind offices of a friend. This chamber is connected with very interesting associations, and when I entered it my emotions were very strong. The front hall or entry remains as it was; the oaken pannels and staircase, painted by the Buddingtons probably ninety years ago, remain as they were. In this entry, especially up the stairs, we children were used to amuse ourselves, sitting on the trunks, at our plays. The two bedrooms below, at the extreme of the dining-room, remain; and I explained to my children how the Tories stormed the house at one o'clock in the morning of May 1st, 1779. . . . . I should have been glad of more time to go around the farms and see where I used to set my snares and traps, where I used to skate, to gather nuts, peaches, and apples, &c.; but time forbade, and we took leave of the old house, with a half promise on my part, that I would return at some future time, with some other members of my family.

It was a great satisfaction to me at the old house to remember that it had been a house of prayer, and for several generations the residence of the wise and the good, — all its tenants, with one exception, having been hopefully pious people.

When Professor Silliman had reached the age of seventy, he felt that he might properly seek a release from his long-continued service in College. His proposition to vacate his office in the autumn of 1850, the response of the Corporation, and his reply to the same, are here given.

To the President and Fellows of Yale College, —

GENTLEMEN, — I beg leave to avail myself of the occasion of your annual meeting for the present season, to com-

municate to the Board my intention to retire from the service of the College at the end of the ensuing academical year, — that is, at the Commencement for 1850. I therefore wish this communication to be regarded as a prospective resignation to take effect at the time named above; and the Corporation will of course in their wisdom adopt in the interim, any measures which the case may require. An earlier retirement would, as I conceive, be inconsistent with the interests of the Institution, and with existing duties, both to the College proper, and to the Medical School; and I am therefore willing to serve for another year. If the reasons of my retiring are asked, I will reply, that I am daily admonished by the rapid flight of time, and often by the departure of my contemporaries, that my work is nearly done. Having now attained to the age of seventy, and fifty years of my life having been passed in the service of the College, I feel that I am entitled to a discharge, and that a younger man ought, ere long, to fill my place. In the retrospect I have the satisfaction to add, that from my colleagues and from my fellow-men, I have received sympathy and encouragement, and from the Corporation, both confidence and efficient aid; but of those venerated men who under President Dwight, invited me, in my youth, into the service of the College, not one remains. The time of my own departure from the College is at hand, and when it shall arrive, I shall leave this long-cherished Institution with deep affection and earnest solicitude for its prosperity, and shall never cease to pray that God may continue to regard it with favor, and to bestow upon it His blessing.

I remain, gentlemen,
Very respectfully, your obt. servant,
B. SILLIMAN.

YALE COLLEGE, *August* 8, 1849.
Die Natali.

Professor Silliman, —

DEAR SIR,— Your letter having been laid before the Fellows of Yale College, at their meeting convened August 13, and adjourned August 16, 1849, it was *Resolved*, That this Board entertains a high and grateful sense of the very eminent services which Professor Silliman has rendered to the College during his long term of office; and regrets that the approach of old age makes him feel it to be necessary to withdraw from his professorship. *Resolved*, That he be requested to continue his lectures in the departments of Mineralogy and Geology, after the autumn of 1850, when his resignation is to take effect, should his life and health be spared until that period. And I was directed to furnish you with a copy of these resolutions. . . . . Allow me to express my deep regret that the time draws nigh when you and Professor Kingsley contemplate a partial or entire sundering of that bond which has so long bound you to Yale College. It will give me a feeling of loneliness and desolation when you leave us.

Very truly and respectfully yours,

August 17, 1849. THEODORE D. WOOLSEY.

President Woolsey, —

REV. AND DEAR SIR, — I return you my thanks for your letter of August 17, communicating a copy of certain resolutions of the Corporation of Yale College, in relation to myself and the professorship which I have prospectively resigned. I am gratified by the favorable opinion entertained of my services, and am grateful to you for the kind manner in which you have communicated it. I will take into respectful consideration the request of the Corporation, that I would continue to teach in the mineral department of the professorship, and will in due time communicate my decision.

I remain, my dear Sir,

Very respectfully and truly yours,

August 20, 1849. B. SILLIMAN.

The latter part of this year was clouded by the apprehension of a great affliction. The illness of Mrs. Silliman is alluded to in the Diary in the following notice of the death of one of her friends: —

Mrs. Olivia Day, wife of the Rev. President Day, died on Friday noon, January 11, 1850. She took to her bed on New Year's day, with a hard cold, which became first a catarrhal, then a congestive, and finally a typhus fever. On the day on which she took to her bed, she wept (as Miss T—— who was with her informed me) because she could not come to visit Mrs. Silliman as she wished to do, and to watch with her; but she was called away first, and with a very short warning, while her friend still lingers on the boundary line between the two worlds. My venerable friend, President Day, now far on in the evening of life, is thus deprived of the companion of thirty-eight years; but he is a heavenly-minded man, and receives the bereavement with a most Christian spirit; and he enjoys the alleviation of domestic society. His two daughters, with the husband of one of them, and an interesting grandchild, make his house still a home while he lingers in this world, and he has a better inheritance in store in the world which is to come.

On the 18th of January, Mrs. Silliman died. Her illness had been long and distressing. The Diary, for several months after this event, is taken up with tender recollections of her life. In beginning a new volume, he adverts to the same theme: —

March 3d. — The preceding number of this private Journal closed with the death of my dearly beloved wife, and many pages were devoted to her memory; to an analysis of her character; to our mutual history of the events which led to our marriage, and to extracts from numerous letters

of sympathy and condolence from affectionate friends, who loved and revered her. Six weeks ago this day her cold remains (lovely in death, her features having lost all traces of suffering and of mortal agony, and having recovered their natural expression) were still with us in the front room where she died.

Since her death, I have reluctantly turned to any other subject, being absorbed in the most interesting recollections, and in the contemplation of her pure and elevated Christian character. There have been few events to record. I have made two journeys to New York, the first of love and sympathy to and with my children (M—— and F——) and their families. . . . . Of common occurrences I have little inclination to take notice, and am not willing to lose the deep and tender impression of the last month. I am not, I trust, disposed to cherish a morbid grief of mere sensitive and natural melancholy; but I am anxious that this bereavement, the most painful that I have ever met with, may produce in me its proper and best effects, in increased spirituality and diligent preparation for my own departure. I hope never to lose the impressions now strongly engraved upon my mind, which is however, not desponding, but realizes a void in the absence of that wise and good, and ever sincere and faithful wife, mother and friend, whose place cannot be supplied fully even by my affectionate, devoted, and excellent children. But there is One who can console me, who can sustain me, and to Him I resort with more earnestness than ever, and with the aid of the books of spiritual counsel and practical piety, and of sacred poetry, the holy hymns and heavenly songs, which were used by my late wife, — the very volumes which her dear hands have so often opened in her religious retirement, I hope that I am drawing nearer to my God than ever before.

This day I have attended the sacred ordinance of our Saviour, instituted in immediate contemplation of His death. It is now a period of fifteen months since my dear departed

wife was present at this ordinance in public; but it was celebrated in her sick-room last summer, — Rev. Professor Goodrich having kindly made the arrangements and performed the service; so that it is now more than half a year since I united in partaking of these elements with her who now needs, I trust, no symbols; but, being in the Saviour's immediate presence, is a purified, holy, and happy spirit, and perhaps permitted even to revisit these scenes: and who knows that her spirit may not now be conscious of what I am doing? If such a thought should make me vigilant, how much more should the certainty that I am always in the presence of the infinite God!

Dr. Fitch's sermon to-day was on justification by faith, — a doctrine full of comfort. Lord, I believe, help thou mine unbelief! It is an unspeakable comfort to know that our sins are forgiven for the sake of Christ, and that God will not condemn us for sins for which we could never atone, while our continued obedience is as much required of us as if we expected to be saved by our performance of duty. There is no comfort for the sinner except in the intervention of the Saviour.

Yielding to the persuasions of his family, he left home for a short visit to Washington.

New York, March 10, 1850. — We are on our way towards Washington, in consequence of the earnest request of my son that I would meet him at Washington, where he is expecting to arrive from Louisville with his family, about the middle of next week. My daughters were earnest that I should go, and all coincide in the opinion that some change of scenes may be useful to me, after the long course of anxiety and affliction through which I have passed. They have thought me to be in danger of cherishing sorrow too much. Perhaps I have done it more than was expedient, and I am willing to become cheerful with sobriety, and to cherish spiritual affections, and hope never to

lose them. We have attended service to-day in St. Peter's, an Episcopal church, whose minister, the Rev. Mr. Canfield, is an evangelical man, and an earnest and instructive preacher, without any tincture of Puseyism, or any other form of High-Church opinions.

While in Washington, he paid his respects to President Taylor, and also met his former pupil, Mr. Secretary Clayton.

We — that is, Benjamin, Dr. Bartlett, and myself — were introduced by Mr. Senator Baldwin, and were received in a frank and courteous manner by the President in his business-room. His manners are plain and soldier-like, and he converses readily, and apparently with openness and candor. I inquired for his health, and whether the change from a tent and the field to a palace had been injurious. He said no, but spoke with partiality of his tent of eight feet square. I inquired for his son, who was some time at Yale College. He replied, that he was at home taking care of affairs, and added: "I told him not to come to Washington, that I would not give him any office if he did, and that one in a family was quite enough." This was said in a very pleasant manner. I alluded to the great agitation now going on in Congress, when he replied, that he believed they would be obliged to come to the plan of the Administration at last, — that is, to permit the people of the territories to settle the question for themselves. I replied that I had been much pleased with the sentiments contained in his address to Congress, and thought they indicated the true course. The interview did not last more than six or eight minutes, when we took our leave with a hearty shake of the hand. His manners are not exactly graceful; he has the appearance of being a little nervous and not quite at his ease. The best portraits of him are mainly correct; but he is more care-marked, and

his face more deeply furrowed, than those pictures represent.

Mr. Baldwin took me to the house of the Secretary of State, Mr. Clayton, and I was received with the warmest cordiality. Mr. Clayton was, in Yale College, a brilliant scholar, and an elegant and beautiful young man, and I had never seen him since that period, — thirty-five years ago. His youthful form, light and graceful, is now enlarged to that of a very portly man, and his hair is of snowy whiteness. As he gave me his hand with a friendly grasp, he said: "I should have known you, but you would not have known me." I replied, that I might have passed him in the street without recognition, but that I could now recall his youthful features, his voice, manner, and action. He expressed very great pleasure at meeting me, and said he had always retained me in grateful remembrance; that he had attended my lectures "with admiration and delight"; and he earnestly pressed me to prolong my visit. . . . . Mr. Clayton expressed great interest in Yale College and its older officers. I reminded him of the approaching termination of the third semi-centennial period of the College, and invited him to be present, as there would be some special commemoration; he almost engaged to be present and to speak on the occasion.

Shortly after his return from Washington, he had occasion to record his reflections upon the death of a distinguished statesman, once his pupil.

Sabbath Morning, April 7. — John C. Calhoun died at Washington last Sabbath morning, calm, and in perfect possession of his reason. No remark is quoted regarding his soul and his prospects for another life. I have known him from his youth up. I first became acquainted with him at Newport, Rhode Island, when he was a youth preparing for College. I think it must have been about the

year 1801. He there lived in the family of his aunt, Mrs. F. Calhoun, whose daughter he afterwards married. He was graduated in Yale College in 1804, after only two years of actual residence. He was a first-rate young man, both for scholarship and talent, and for pure and gentlemanly conduct. His high destination was foreseen by Dr. Dwight; but his mind was of a peculiar structure, and his views also were often peculiar. Three of his College instructors are still here, — President Day, Professor Kingsley, and myself; and both towards us and the College he always manifested feelings of warm attachment, and we in turn esteemed him and loved him. His public career has been highly distinguished. It is, however, very much to be regretted that he, many years ago, narrowed down his great mind to sectional views, and that he became morbidly sensitive and jealous of encroachment as regards the South, and especially in reference to the protective tariff and to slavery. The former prompted his efforts for nullification, and the latter excited him to a vindication of slavery in the abstract. He in a great measure changed the state of opinion and the manner of speaking and writing upon this subject in the South, until we have come to present to the world the mortifying and disgraceful spectacle of a great republic — and the only real republic in the world — standing forth in vindication of slavery, without prospect of, or wish for, its extinction. If the views of Mr. Calhoun, and of those who think with him, are to prevail, slavery is to be sustained on this great continent forever. I will not occupy time of a Sabbath day, nor my pages, with any extended remarks upon this subject, which is now agitating the national councils, and to a degree the nation itself. These private pages are not intended for politics, and I will not devote them even to this great moral subject. It is in better hands than man's; and I trust that ultimately the colored men of all races on this continent will be received into the great human family

as rational beings, and as heirs of immortality. While I mourn for Mr. Calhoun as a friend, I regard the political course of his later years as disastrous to his country and not honorable to his memory, although I believe he had persuaded himself that it was right, and that he acted from patriotic motives.

In compliance with the request of the College authorities, Professor Silliman consented to withdraw, for the present, his resignation, which has been already mentioned.

During the week before the last, President Woolsey called and informed me that a meeting of the Professors and himself had been held, during my absence at Washington, on the subject of my proffered resignation of my office as Professor in Yale College, and that they had unanimously voted to request me to reconsider that determination. This was followed last Tuesday, April 9, by a vote of the Prudential Committee to the same effect.

I annex my reply to President Woolsey's note: —

Rev. President Woolsey, —

DEAR SIR, — In compliance with the wish "unanimously" expressed by the Prudential Committee, and communicated in your note of this day, I think it my duty to "reconsider my determination to withdraw from my professorship." Important changes have taken place in the course of the year, and I now feel, that should it be the desire of the Corporation, I ought to follow the example of President Day, and remain in my office for a season, until Providence shall point out more distinctly the course of duty both to the College and myself. I remain, very respectfully, yours,

B. SILLIMAN.

YALE COLLEGE, *April* 10, 1850.

The recurrence of his birthday filled his mind, as usual, with devout thoughts.

August 8, 1850, *my Birthday.* — It was a solemn thing in 1848 to enter on my seventieth year, and, in 1849, to finish it; it is still more solemn to have lived through my seventy-first. It is still a subject of lively gratitude that my health remains perfect; my eye is not dim, nor my natural force abated. . . . . I pray God, that as my years increase, I may increase in divine knowledge and in goodness, and be better prepared for my last and great change. . . . . Last evening, after writing the preceding page, I turned to the seventy-first Psalm, and perused it with much interest. It seems very applicable to me in my advancing years: "Thou art my hope, O Lord; Thou art my trust from my youth." "I am as a wonder unto many" (because my strength has not failed, blessed be God!) but I pray that Thou "wilt not cast me off in the time of old age." "O God, be not far from me"; "I will go in the strength of the Lord God." "O God, Thou hast taught me from my youth, and hitherto have I declared Thy wondrous works." "Now also when I am old and gray-headed, O God, forsake me not, until I have showed Thy strength to this generation." "I will praise Thee, even Thy truth, O my God." "My lips shall greatly rejoice when I sing unto thee." "My tongue also shall talk of Thy righteousness all the day long."

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CHAPTER XXI.

VISIT TO EUROPE: SECOND MARRIAGE: RETIREMENT FROM OFFICE.

His Second Visit to Europe. — His Reception and his Travels. — Letters from Humboldt and Carl Ritter. — Letter from President Day. — His Second Marriage. — Letters to Dr. John Griscom. — Death of Professor Stuart. — Death of Professor Kingsley. — His Renewal of his Resignation. — Interview with Daniel Webster. — Death of Dr. Mantell. — Proceedings connected with his Retirement from Office. — His Reflections on this Event.

An event of signal interest, in this period of Professor Silliman's life, was a second visit to Europe, which he accomplished in 1851. His companions in travel were his son, Professor Silliman, Jr., with his wife and her sister, a young uncle of these ladies, a grandson of the elder Professor, — Mr. Walter S. Church, and Professor George J. Brush. Landing at Liverpool, the same port where he had disembarked nearly half a century before, he had the pleasure of greeting once more Mr. John Taylor, whose acquaintance he had formed in the earlier tour, and with whom he had been for some time in friendly correspondence. Arriving in London, he was warmly welcomed by Dr. Mantell. They had never before met, although an intimate friendship had grown up between them through a correspondence which had been continued for many years. At a meeting of the Geological Society, he received marks of cordial

respect from Lyell, Murchison, and other distinguished men of science, and was formally introduced to the body, which he briefly addressed. In Paris, like attentions were paid him by Adolphe Brongniart, Milne Edwards, Elie de Beaumont, and other persons of distinction. He was escorted to a meeting of the French Academy by Cordier, the sole survivor of the corps of *savans* who attended Napoleon to Egypt. Journeying southward, he passed through Lyons and Marseilles to Geneva, and thence into Italy, descending to Rome and Naples, and making a brief visit to Sicily. At Naples, he was courteously received by Professor Melloni. He explored the ruins of Herculaneum, and evinced his bodily vigor by climbing the sides of Vesuvius and exploring Etna, and by the ascent of Mount Bolca, in an excursion from Venice. After seeing the principal cities in the North of Italy, he returned to Geneva. Here, as everywhere, civilities were shown him by scientific men of the highest position, by Pictet and Favre, by Marigniac, and by De la Rive who recollected and mentioned Professor Silliman's early experiments in galvanism. Mount Blanc and the glaciers, he visited with the double interest that belongs to a lover of nature and a student of science. In Switzerland, he met persons of his own name, descendants, it is probable, of common progenitors. In Germany, his name was well known to persons eminent in science, with whom he was now brought into pleasant intercourse, — such as Liebig in Giessen, Broun and Leonhard in Heidelberg; and in Berlin, those illustrious men, — the brothers Rose, Mitscherlich, Ehrenberg, Ritter, and Humboldt. Returning to England,

he spent a short time in London and its neighborhood, and after a prosperous voyage, arrived in New York on the 14th of September.

It was a disappointment to him that he was cut off, by want of time, from revisiting Edinburgh, his old home. But he saw those parts of Europe which he had been prevented from visiting in the earlier tour. He had sustained the fatigues and exposures of the journey with remarkable vigor, had met face to face men whom he honored, and who were glad to honor him, and had derived recreation from the temporary withdrawal from his ordinary labors. A Journal of his travels, entitled "A Visit to Europe in 1851," was prepared by him, and has passed through several editions.

It had given Professor Silliman peculiar pleasure to take by the hand those veterans in science, — Humboldt and Ritter. From both of these great men, whilst he was abroad and after his return, he received marks of esteem and respect. Ritter was of the same age as himself. He died before receiving an answer to the last of the letters which follow: —

FROM ALEXANDER VON HUMBOLDT.

I AM greatly moved by the kindly words of Professor Silliman (and his son, worthy of him). I have already expressed to our common friend, MR. Dove, how much I desired to have the acquaintance of one whose labors have exerted, during so many years, a beneficent influence upon the progress of the physical sciences in your noble and free country. Compelled to-day to return to the country in which are the tombs where I shall soon be placed, I reserve

the reading of the interesting analyses of "the waters of Montmorency and St. Charles Rivers," and the two papers of Mr. Dana upon the growth and the trends of the islands of the South Sea, as well as upon the effects of the contraction (wrinkling) of the crust of the earth, which have been before treated of by Babbage and Elie de Beaumont. If I have moral reasons to fear the immeasurable advancement of your Confederation, the temptations to an abuse of power dangerous to the preservation of the *individuality* of the other peoples of America, I should not the less recognize the great advantages which physics and the positive sciences, the world over, must draw from this very advancement, from that intelligence which penetrates everywhere with those civilizing conquests, which facilitate movement, and superimpose, not without violence, new layers of population upon the native races which rapidly become extinct.* However imposing the spectacle may be which is taking place under our eyes, and which is preparing another far more curious for the history of the intellectual development of our species, I foresee the remote epoch when the high degree of civilization and of institutions, *free*, *stable*, and *quiet* (three elements which do not readily coalesce), will penetrate into the tropical regions; when, upon the high plateaux, Mexico, Bogota, Quito, La Pax, Potosi, will resemble New York, Boston, Philadelphia.

Accept, I beg you, Sir, — yourself and your excellent son, — the renewed expression of my high and affectionate consideration.

ALEXANDER HUMBOLDT.

BERLIN, *August* 5, 1851.

Be pleased, if you have the opportunity, to present my warm regards to Mr. Agassiz, as eminent for his vast and

* In the margin opposite this sentence, Humboldt writes: "The possible formation of a great State independent of sugar, slaves, cotton, and the sweet legislation which accompanies the cultivation of these products."

solid acquisitions of knowledge, as for the great amenity of his character.

FROM CARL RITTER.*

RESPECTED SIR, — In the name of the *Geographical Society of Berlin*, I have the pleasure of sending to you their diploma, — the Society having honored itself by electing you an *extraneous honorary member*, — in the hope that you will accept it as a sign of respect and thanks for the great scientific contributions, including those to the special geographical department of this Society, with which you have enriched, for so long a period of labors and exertions, the old continent from the new.

With the greatest respect, and the best wishes for your welfare,

Your most devoted servant,

CARL RITTER, *President of the Geographical Society at Berlin.*

BERLIN, *August* 4, 1851.

FROM CARL RITTER.

RESPECTED SIR, — The personal intercourse you favored me with, on your visit to Berlin in 1851, and the spirited notes and characteristics you gave (in the "Visit to Europe," Vol. ii. 318–322) respecting the now deceased, greatest, and at the same time humblest and loveliest, of our philosophers, the immortal *Alexander Humboldt*, encourages me to send you a *Programme* having reference to the perpetuation of his memory by continuing to work, in his spirit of liberty and of love for mankind, for the advancement of science and humanity, and for the welfare of all civilized nations.

All who will freely favor the foundation of the *Humboldt Stiftung*, will partake in the results of an institution that

* The preceding letter of Humboldt is translated from the French. The letters of Ritter were written in English. — *F.*

will be founded after the principles declared in the *Programme* subjoined, by the best representatives of our academies and coryphæi of science. Would that other committees would associate themselves to contribute to the creation of this scientific organon!

Hoping that you, respected sir, will accept with kindness the invitation, and promulgate the character of it to your countrymen, who loved and admired their glorious "half-American confrère," as he called himself on several occasions, and pardon the boldness and confidence with which I address you, I have the honor to subscribe myself

Your most respectful and devoted

CARL RITTER,

Dr. and Prof.

BERLIN, *August* 8, 1859.

Among the letters which he received in Europe, was one from his oldest colleague in office.

FROM PRESIDENT DAY.

NEW HAVEN, *July* 26, 1851.

MY VERY DEAR FRIEND, — I have this day received your interesting letter of the 1st from Milan. Thanks to a beneficent Providence which has thus far preserved your life and health in the multiplied exposures incident to your varied wanderings on the land and on the water. I rejoice that you are able to sustain the labors and exhausting excitement of a tour so diversified and so deeply interesting. What a contrast to the monotonous tenor of my life at home, the post-office being about the limit of my daily peregrinations! Yet I ought to be grateful that I am in circumstances so well adapted to my infirm state of health. Professor Stanley, whose travels have been further extended than yours, to Egypt and across the desert to Palestine, has returned with no great improvement of his health.

He is, perhaps, some better than when he left us, nearly a year since. Though changes in this land of progress and intense activity, are more rapid than on the other side of the water, yet such is now the facility of communication with Europe, that I can probably give you very little information which has not already reached you. The principal subject of public agitation, for many months past, is the law of Congress for the restoration of fugitive slaves. Politicians of opposite parties are endeavoring to make capital from it, for the next Presidential election. This dark feature of slavery is to be the plague spot of our beloved country, for a long time to come.

Monday morning, July 28th. — Being interrupted by company on Saturday, my letter was left unfinished. How rapidly the years roll away. We have already come round to another Commencement week. The first exercise of the occasion was an admirable valedictory discourse by Dr. Fitch, yesterday afternoon. This evening Dr. Bushnell is to deliver an address on music, on the introduction of an organ into the College Chapel. While the new class are under examination for admission, we are favored with an eclipse of the sun. Thanks to the progress of science that we can witness the phenomenon with so much composure, while it spreads terror and dismay among ignorant and barbarous nations.

The College is moving steadily on in its career of prosperity. The most exciting event among those connected with it is the alarming illness and marvellous recovery of Mr. Herrick. At the meeting of the Prudential Committee in April, he was reduced so low that no hope was entertained of his restoration. It was believed, and perhaps truly, that the process of mortification had already commenced. At the next meeting of the committee, he was doing business with them, in good health, except a lameness in one of his feet. Mr. Warner remains much as he was, perhaps a little better. . . . . May He who is the sure protector of all who put their trust in Him, keep

you and bless you, and return you in safety to your friends and beloved home.

Yours, as ever,

J. DAY.

Shortly after Professor Silliman's return from Europe, he was married to Mrs. Sarah Isabella Webb, of Woodstock, Connecticut, daughter of John McClellan, Esq., and a relative of his first wife, Mrs. Webb's grandmother having been a daughter of the first Governor Trumbull. The lady to whom he was thus united had been connected, as well by long friendship as by ties of blood, with his family. It is sufficient to say that her society and her assiduous care were the principal source of his comfort and happiness in the closing years of his life.

One of the oldest and most respected of Professor Silliman's friends was Dr. John Griscom, distinguished alike for his scientific merits, and for his philanthropy. He was Professor Silliman's senior by several years. For a long period he lent his aid, in the way of scientific contributions, to the "Journal of Science." He and the venerable Professor Chester Dewey, who still survives, were active coadjutors of Professor Silliman, when in this country the science which they cultivated in common was still in its infancy. Dr. Griscom was a member of the Society of Friends. He died just one month after the last of the following letters was written: —

TO DR. JOHN GRISCOM.*

NEW HAVEN, *January* 15, 1850.

MY DEAR OLD FRIEND, — Old we both are in years, for I too have passed the solemn boundary of threescore and

* This letter was written before the death of Mrs. Silliman; the letter which follows, after the author's second marriage. — F.

ten, but I use the word old in relation to the friendship which has the maturity of more than forty years; and I am gratified by your very friendly letter received yesterday. . . . . I think you are wise in giving your mind in the evening of life more to spiritual than to physical science, and it is happy that you have so good a friend as Mr. Carter, to aid you with books. As we draw near to the boundary between the two worlds, it is natural and wise to occupy our minds principally with those subjects that relate to our immortal nature. I have taken a step towards a release from a part of my physical labors. I have resigned the chemical chair, and indeed my entire professorship, but the Corporation desire that I should remain in connection with the College in the department of mineralogy and geology, and I have that matter now under consideration, and probably may go on for some years more (if more years are granted to me) in that department. . . . . A successor to myself is not yet appointed, but it must be done ere long. I am reminded that my work in this world is almost finished; my contemporaries are chiefly gone, — my dear friend Chauncey was one of the last called away, and yesterday I followed to the grave the remains of my friend Mrs. Day, wife of our late and still surviving President Day. But the case is coming still nearer to me. My own dear wife, the cherished companion of more than forty years, is now in the last stages of consumption, and her death may be expected at any time; but I bless God that her mind is at peace; her faith and hope, founded on the Rock of Ages, are firm and cheering, and she looks with confidence to the blessed Redeemer for her safety. We who have been watching her decline for more than a year are, therefore, cheerful in the midst of sorrow.

Your son sent me the pattern volume of your copy of the "American Journal," and the work is now in progress in the hands of the binder, and I trust will be forwarded to your son in a few days. I had pleasure in making up your set

of the old series, and in adding the new, which, if it would be of any interest to you, I will continue to send to yourself at Burlington. My son-in-law, James D. Dana,* is now principal acting editor, and I think you will find the work more thoroughly digested than in earlier times; but nothing in the miscellaneous department can ever rival those rich contributions which you made with so much punctuality and judicious selection, and which I relinquished with great regret on account of poverty of means, and the rude assault made by a man, whom, had I then known him thoroughly, I need not have so much regarded. I wish you could read the historical sketch prefixed to the Index volume. That volume was compiled by Mr. Dana, — a vast labor. I shall hope to hear from you when your volumes of the Journal reach you, and you will then inform me whether I shall continue to send the new series.

I remember with pleasure my short call at your house, in August 1848, and should be glad were it in my power to renew it, and to become still better acquainted with the very agreeable lady who cheers your evening of life. I have, at snatches of time early and late, read through, this season, the life of William Allen, and also that of Elizabeth Fry. Such exhibitions of Christian benevolence are enough to shame all common, every-day Christians. But all cannot be Apostles, and we must do what good we can in our humble spheres of life.

I believe I mentioned these distinguished Christian friends in a former letter. Mrs. Fry I never saw, but William Allen I knew personally; he changed, however, in his person. As I knew him, he was a tall, slender and active man, and I should never have dreamed that he could have been transformed into the voluminous personage represented in the frontispiece to his life. His intellectual and moral sunshine do, however, illumine the face of the old man, and no doubt they now shine in heaven. With my

* Professor Silliman, Jr., was at this time in Louisville, Ky.

best regards to your amiable and worthy partner and daughter, I remain, as ever,

Your faithful and affectionate friend,

B. SILLIMAN.

I have written this hasty letter by the light of the lamp of my dear wife's sick-room, between five and six o'clock in the morning.

TO DR. JOHN GRISCOM.

NEW HAVEN, *December* 14, 1851.

MY DEAR FRIEND, — Your very friendly letter of the 3d and 26th ult., was most gratefully received, and I avail myself of the quiet of a Sabbath evening to reply. I had thought frequently of you, and have been solicitous to know how it has fared with you since my brief call upon you, I think two years ago last July, — as I have had no information of a later date. I thank you and your kind amanuensis (a good wife or daughter) for the facts regarding your condition. I grieve to learn that your eyes are failing you; it is however, a great alleviation that you can still walk the streets without a guide, and that you can recognize your friends. It is also a great favor that you have such assiduities of friendly attention, and that your females can supply eyes, and that your hearing permits you to receive gratification through that inlet. You do not advert to an irregularity of the heart which you mentioned when I saw you last, and I trust that it does not disturb your quiet. Amidst bodily decay I trust you have the hopes of a Christian depending upon the great salvation, without which our condition in old age and in death is indeed forlorn. Our different modes of worshipping God in this world are of little moment, if our hearts are right with Him, and there is no safety in any reliance except upon our divine Saviour. As we go on in life He becomes more and more precious to us; He has paid our debt, and sustained the penalty of the law for us, and salvation through Him is a gift as free as it is all-sufficient and indispensable.

You kindly inquire for my welfare; you may perhaps be surprised to know that my house has again a female head. My situation was peculiarly trying; not an individual of my family remained under my roof; I was absolutely alone, and must either break up or go on with hirelings. I might have been compelled to one or the other course, had not a kind Providence directed me to a very dear friend of my late wife, a relative also, both being lineal descendants from the good Governor Trumbull, the friend of Washington; and she was already in habits of affectionate intercourse with all my children, and her age and character in all respects were fitting and proper. The marriage took place at Woodstock, Connecticut, her native place, September 17, 1851, the anniversary of my marriage at Lebanon, forty-two years ago with my late beloved and revered wife. My present wife was Mrs. Sarah J. Webb, the daughter of John McClellan, Esq., one of our most respectable old men now verging on eighty-four. My house is now reëstablished in all its former comfort, and the present Mrs. Silliman's habits and principles of action are so in unison with those of her predecessor that there is no change in our domestic condition.

My tour in Europe was undertaken for the gratification and advantage of my son. Our party was seven, and our courier on the Continent added another. . . . . In our entire tour all were well, and we met with no accident or molestation whatever. My son and Mr. Brush managed all business concerns, and left me all my time, and I wrote constantly, and finished five quarto volumes, containing fourteen hundred pages and more, with numerous illustrations of prints inserted in the books. I wrote now for my children, as I formerly did for my brother. You will infer that my physical power is not impaired. . . . . If I have written too much about myself, I believe I must charge it to your kind solicitude to know something of my history for later periods.

I cherish the memory of our early and constant friendship, and should be very happy, if possible, to make an excursion from Philadelphia to see you for a few hours. I expect to be in that city in the last week of January, probably about the 28th or 29th. And now, my dear friend, once more farewell; we cannot meet many times more in this world, and I pray God that we may be among the accepted at the great day, and then meet to part no more. With kind salutations to your wife and daughter, I remain, as ever, your affectionate friend,

B. SILLIMAN.

I shall be happy to hear from you again.

TO DR. JOHN GRISCOM.

NEW HAVEN, *January* 26, 1852.

MY DEAR FRIEND, — I thank you very cordially for your good, affectionate letter, so full of heart as well as head, and so elegantly and beautifully expressed, withal, as to prove a mind in full vigor, and social and moral faculties in lively action, with no mark of old age but its wisdom. I am exceedingly gratified that my letter was acceptable. Being so condensed a sketch of many events and places, I feared it would stand before you as a dry skeleton, but your kindness has clothed it with muscles and integuments. We were indeed highly favored in our long and arduous journeyings; and we went in a fortunate season, for Europe, if not approaching a great convulsion, is more, even than when we saw it, bowed down beneath an insupportable military despotism, rendered far more formidable by the late usurpation; and who knows whether Americans will now be safe, especially after the despots are informed of the manner in which Kossuth has been received in this country, not only by the people, but by the government. We were for two or three months under Austrian, Neapolitan, and French military despotism in Italy, and were made acquainted with frequent arrests and imprisonments for the most trivial causes or no

cause at all. I should not care to be now a traveller on the Continent. The case of those three young English noblemen at Leghorn occurred while we were there, in July, and it was feared by Americans that it would go hard with them. I have been hoping that we might visit you in the progress of our approaching journey, but I think it will now be impracticable, as we do not set out until Tuesday, and shall stop in the cities, and I must be in Washington on Friday. I will not, however, relinquish the hope that we may meet once more in this world; and if not before, I will flatter myself that I may make an excursion in the summer, if life and health are spared, and find you at Burlington where I used to find my dear friend, Charles Chauncey. Alas! most of my early friends are now in the other world. I am now seventy-two years and five months old, and if I remember correctly, you are a few years in advance of me, and we have no right to make engagements for distant periods of time. As to the destitution of personal piety among mankind, I believe you have pointed out the true causes. God can emancipate man from his depravity, and plant and invigorate faith in his mind, and human means seem ineffectual and accomplish little; but although we are weak and our minds dark, we are not excused from exertion, and all may diffuse an influence around them for good; and teachers of science, who are indeed expounders of the will of God, as it is recorded in His works; should always live and breathe in a moral and religious atmosphere, and draw their pupils within it that they so may inhale its precious influence. I think also, with you, that those who find the God of nature in His works should also find the God of revelation in His word, and not leave it a matter of doubt, whether they look to the Saviour for their salvation. It seems almost as if nothing short of a miraculous interposition of God Himself could effectually arouse mankind from their lethargy, or emancipate them from the bondage of sin. This state of things does not

excuse us from our personal responsibility, living as we do under the meridian light of the Gospel dispensation. . . . . President Day, now in his seventy-ninth year, is still, by the favor of God, with us, although for ten or twelve years more or less threatened by irregularities of the heart, which at times comes to a pause and then flutters and then stops again, and threatens to take on its final rest; but he is ready, and I believe, willing to go; and what an exhilarating bound it must be, to spring out of this mortal coil, enfeebled and deranged in functions, into the glorious liberty of the sons of God! . . . . I remain, my dear friend, with every good wish,

Truly and affectionately, yours,

B. SILLIMAN.

The winter of 1851–2 was marked by the death of an eminent man whom Professor Silliman had known well in earlier days. This event he thus notices in the Diary: —

Death of Rev. Professor Stuart, D. D., of Andover, Mass.— This eminent and good man died on January 4th, at his home, being in his seventy-second year. I was born in August 1779, he in the following March 1780, and he was, therefore, seven months my junior. His praise is in all the churches. Long an eminent professor in the first theological school in our country, and the author of many works in illustration of the Scriptures, he has made a permanent impression upon the age in which he lived. My personal relations with him were very friendly; we were early associated in the Faculty of Yale College. After his establishment at Andover, he addressed a letter to me upon the relation of geology to the first chapter of Genesis; this was, I believe, in 1824. I replied at considerable length, and he rejoined in a long letter containing his difficulties. This correspondence gave origin to my appendix to Bakewell's

"Geology." In this appendix the difficulties were discussed, and, as I thought, in a good degree obviated; but Professor Stuart was not satisfied, and published a paper which he thought unanswerable, but it was very completely answered* by Professor Kingsley. I know not whether Mr. Stuart changed his opinion; I suppose he did not.

In the next summer, he lost a life-long associate and friend, — one of the three professors who had served with President Dwight.

Death of my excellent Friend and Colleague, Professor Kingsley. — This very painful event has come upon us very suddenly. Returning from our journey from Hanover, Friday, 28th August, (1852,) and arriving at eight o'clock, P. M., we heard that Mr. Kingsley was ill with the dysentery, but no anxiety appeared to be felt. I called near noon of the next day, and found him very weak, and he impressed me unfavorably as regards the aspect of his disease. He was cheerful and affectionate, and appeared glad to see me.

August 29, *Sabbath Morning.* — The day was extremely tempestuous, with violent wind and torrents of rain, and I did not go out; but we heard from Mr. K. that he was no worse.

On Monday afternoon, September 30, I called and found him apparently more comfortable, and I left him encouraged, and saw no symptoms of immediate danger, although I learned that the physicians were very anxious about him. On Tuesday morning, near eight o'clock, I was on my way to his house, and met Mr. Porter, who informed me that he was already gone. I hastened to the death-bed, and found it was indeed true. Mrs. Kingsley was calm, and told me that his conversation with her, in the immediate prospect of death, had been very satisfactory. He was quite satis-

* In the *Journal of Science.*

fied to go; thought it was the best time,— that he had lived long, and gone through the duties assigned him, and he expressed religious views and feelings that were satisfactory. When last I saw him, on Monday, his mind wandered a little, as it had done before. I exceedingly regretted that I had not passed the Sabbath with him, as I should have done had the danger appeared to me imminent. The funeral was on Wednesday, September 1, from the Centre Church, where many people attended. President Woolsey had been absent in Litchfield County, with his family, but was sent for by express. He arrived in season, and had found time to prepare an excellent address, in which he embodied the most interesting traits of Mr. Kingsley's character and mind and attainments. The discourse gave great satisfaction to the family, and to all who knew the deceased. Our trio is now broken. President Day, Professor Kingsley, and I have walked together in friendship, and as colleagues in college-duty, for more than fifty years, — a rare case which, I believe, has never before occurred in this country. The next call in our now broken band, must be Mr. Day or myself, and it may not improbably be myself, although I am six years younger than Mr. Day, as I was one year younger than Mr. Kingsley. All of us were born in August, — I, the 8th, 1779, Mr. Kingsley, the 28th, 1778, Mr. Day, the 3d, 1773. I had a loud warning in March, and I know not how soon the final summons may come, — it cannot be far off; but my Saviour is my shield, on Him I rely entirely, and trust I shall find the reliance sufficient in the final trial. The hymn which President Woolsey read at the funeral of Mr. Kingsley, was very appropriate and beautiful: —

"How blest the righteous when he dies,
When sinks his weary soul to rest;
How mildly beam the closing eyes,
How gently heaves the expiring breast!"

The death of this aged Instructor was followed, in

a few days, by the death of a younger colleague, — Mr. John P. Norton, Professor of Agricultural Chemistry. Of him, Professor Silliman writes: —

Alas! Death took the oldest, save one, of the veteran officers of Yale College, and now the youngest has been called away. Thus many hopes are blasted, — all hopes, indeed, connected with the deceased, except the most important of all, that hope which assures us that it is well with our lamented young friend. My first thoughts regarding him are expressed in a printed obituary, and I hope that a memoir of him will be prepared by a literary friend. There are abundant materials, and his character was so beautiful, that it would form an excellent model for imitation.

Professor Silliman accompanies his mention of the death of Daniel Webster with an interesting account of his acquaintance with that distinguished man.

This great man died at his country-place at Marshfield, Plymouth County, Mass., on Sabbath morning, October 24, 1852, at twenty-two minutes before three o'clock, A. M. . . . . We shall, of course, have his biography, which will, I trust, embody many passages of his private life, and many of his colloquial remarks. At Washington, early in 1851, he gave me and my son a private document to serve us in Europe, if needed, and President Fillmore did the same. I met him, February, 1851, at the levee of the President; but I did not advance; he came to meet me, and, with great cordiality of manner, expressed his esteem and regard, and quoted from my English travels an expression which I had used respecting Castlereagh, namely, that hearing him among other great men in Parliament, — Pitt, Fox, Sheridan, and others, — I said of Castlereagh, that,

although his speech was short, it was sufficient to identify his manner. This showed that he had read my book, and was able to cite it correctly. I met him again, the last winter, in Washington, at a party at Mr. David Hall's, when he again came to me, and welcomed me safe back from my recent travels. A levee or party is, however, no place for a continued conversation. Again, May 4 (1852), Mrs. Silliman and myself were in the cars with him from New Haven to Worcester; and although Judge Boardman mentioned at the New Haven station that Mr. Webster was a passenger, I did not seek him, for fear of annoying him, — as great men are so much followed, often, no doubt, when they would gladly be quiet. At Springfield, however, we came into the same carriage, and here again I abstained from advances; but he no sooner saw me, than he left a group in which he was, and came to me, taking both my hands with much warmth, saying: "My dear Professor, I am *very* happy to see you;" and when one offered him a seat, he declined it, and said: "No; I want to sit by the Professor, that I may converse with him." Mrs. Silliman gave up her seat to him, which he at first declined to accept, as he "would not separate husband and wife;" but she took the seat next forward, and immediately we entered on conversation which was most intimate and interesting, quite to Worcester, nearly two hours. I led him to speak of his efforts in Congress, and inquired whether an anecdote which I had heard was true, — namely, that he and General Hayne met at the levee, the evening after his (Webster's) celebrated speech in reply to Hayne, when Webster challenged Hayne to drink a glass of wine with him, and said: "General Hayne, I wish your health, and I hope that you may live a thousand years." Hayne replied: "I shall not live more than one hundred if you make another such speech." Mr. Webster said that the anecdote was true, only the occurrence took place, not at the palace, but at the house of a friend. I told him that the speech was

read in my family, and listened to with as much interest as if it had been a Waverley novel. I added, that we had often, in our domestic circle, spoken of his style as possessing the simplicity and perspicuity of that of the Scriptures. He said, he had always made it a rule neither to write or to utter anything which a person of good intellect could not understand; and that, on an occasion when he, as chairman of a committee, wrote a report, his colleague expressed his surprise that he could understand every word of it; and this was even adduced as a proof that Mr. Webster could not be the man he passed for, — that everybody could understand him. I told him, that, not being a political man, I would take the liberty to say that I had approved, and, in conversation, defended, his course on important political occasions, when he had been censured, and even abused, by some who called themselves his friends. The first occasion was when the ministers of President Tyler took offence, and all resigned, himself excepted.* "It was obvious to me," I said, "that you remained in office in order to settle the great boundary question; you had recently been in England, and personally knew the members of the government; and it was no proof of vanity in you that you were conscious that you could do on that occasion what no other man could; and evidently no man in our government but you could have induced Lord Ashburton to send home for new instructions to enable you to adjust the boundary by concession, — each party reciprocally relinquishing portions of territory, instead of adhering literally to a boundary which the physical features of the country could not enable you to define." . . . . . I added: "In these cases you did right." He modestly replied: "I meant right." Alluding to France, which I had then recently visited, he said that one important benefit had arisen from the French Revolution. Under the old system the crown and the no-

* Who had been also minister of the deceased President Harrison, whom Tyler, as Vice-President, succeeded.

bility* had monopolized almost the entire territory, and the cultivators of the soil were in a state of abject dependence and hopeless poverty; and there were many acts of personal oppression. Now, all the old tenures being broken up, the fee of the lands is in the mass, and France is divided into a great many small farms, which are cultivated by proprietors. This explains why we saw hardly a beggar in the rural districts of France during our late journey, or an individual in rags. Mr. Webster, no doubt, gave the true solution. Many other remarks fell from this great man; but he cut me short, by saying abruptly, but pleasantly: "Now I want to have you talk to me about your own subjects, which I am very desirous to understand, but of which I know but little. I have endeavored to obtain some correct notion of the structure of the earth; and I have piled up fragments of the rocks, laying granite down as the foundation, and placing the other rocks above granite in the order in which they succeeded each other." I assured him that this was all right. He then said that he wished me to explain to him the composition of soils and manure, the constitution of organic bodies, the laws of animal and vegetable life, and the relation between them and the mineral kingdom. Perceiving that he was in earnest, I yielded to his request, and discoursed to him as clearly as I could (for he said he could not understand Liebig, whose work he had read). He gave the most fixed attention during nearly an hour that I was speaking, and appeared as docile as a child. I do not think it worth while to repeat my remarks, except on one topic. After explaining the elementary constitution of organic bodies, — the elements that were properly vital, — I adverted to the extraneous things derived from the mineral kingdom, which, although not strictly vital, are essential; for example: the bones of animals which are phosphate of lime, and the shells and crusts of animals, which are carbonate of lime

* And, it might be added, the Catholic Church.

for the shells, and carbonate and phosphate for the crusts, as of lobsters and crabs. I then compared them with the vegetable world, and gave the instance of the grasses, usually so called, and of wheat, rye, oats, and barley; and of the trees, — bamboos, cane, sugar-cane, corn-stalk, and all similar plants, which are either hollow or filled with a pulp, so that these plants could not support themselves under their own weight, with their fruit and with the force of the wind upon them. Therefore they were provided by the Creator with an epidermis or exterior coat of silex,— flint taken up by the plant from the soil, and which gave them the requisite strength. In some of the larger bamboos the silex is crystallized, and many of them will strike fire with steel; and some plants with silicious coatings are used for scouring knives, &c. I told him that if he would observe the ruins of a barn of hay or a large hay-rick after it was burned down, he would probably find glass resulting from the silex vitrified by the alkali of the plant. This seemed to strike him very forcibly; and, as we drew near to Worcester, where I told him we must part, (as we were going on the Norwich road,) he expressed great regret, and said he wished we were going through to Boston. He said that the conversation had gratified him very much, and that he would come to New Haven and renew it. He then turned to Mrs. Silliman, who had been an attentive listener, and added: "Madam, if I was as rich as Mr. Astor, I tell you what I would do: I would pay your husband $20,000 to come and sit down by me and teach me, for I do not know anything." I must not omit that he and Mrs. Silliman found topics of mutual interest in some individuals, and particularly one lady at Marshfield, whom both of them had known in earlier years. He adverted to the late trial of Mr. Goodyear's patent at Trenton, in which he said, that my certificate, proving the discovery by Goodyear thirteen years ago, had a decisive weight, — a remark which has been since proved true, by the published opinion of the

court. We now parted with great cordiality, hoping in vain to meet again. We — Mrs. S. and I — were forcibly struck by the too evident decline of health in Mr. Webster. His cheek was hollow; his eye sunk deep, even for him, and almost rayless, except when he was mentally excited; his limbs were small; and, altogether, his appearance was painfully contrasted with the full, round, and vigorous form which he presented at the inauguration of President Everett in the year 1845, when I was present. We — Mrs. Silliman and I — remarked to each other, that we feared Mr. Webster had not long to live; but we did not expect a fatal crisis so soon. Mrs. Webster was in the car, but sat with a friend on another seat, and was not a party to the conversation, although she appeared to listen, but was too far off to hear distinctly, or perhaps at all. . . . . Mrs. Silliman reminds me that Mr. Webster said, that while he could not understand the books, he had understood every word that I had said, and that he had derived great satisfaction from the conversation, and wanted a great deal more of it. When the steam-whistle sounded, he exclaimed: "This is too bad; I cannot be reconciled to it!" and said he would seek us at our home. When we were near parting, Mr. Webster, in his own peculiar manner, with a strong voice and an excited countenance, said: "I have given my life to law and politics. Law is uncertain, and politics are utterly vain; but there is a noble certainty in science which commands my admiration, and I should be willing to spend my remaining days in the study of science."

A few months after the death of Mr. Kingsley, Professor Silliman was deprived of another friend to whom he was united by the strongest bonds of confidence and affection.

Dr. Gideon Algernon Mantell. — This lamented man, my faithful and devoted friend during twenty years, died at his

own house in Chester Square, London, November 10, 1852, about three o'clock P. M. . . . . I have lost the friend I valued most, beyond my own family; * for twenty years he had poured his bounties into my lap, and his affections into mine. It is a great satisfaction to me that I saw him, and was an inmate of his hospitable house eighteen days, during our late European tour, — in December, 1852.

On the day when this record was made, he makes mention of an interesting epoch in his own history.

December 18, *Saturday.* — I gave the last chemical lecture of the College course. The subject was the congelation of carbonic acid, and of quicksilver. It was done very successfully, and appeared to give great satisfaction. Hon. Asa Bacon made some remarks to the students before the lecture, on the superior advantages enjoyed by them compared with those afforded to him and me in our College course; (he was my senior in Yale College;) and he bestowed encomiums on me more than I deserve.

Near the beginning of the Diary for 1853, stands this notice of the death of Mr. Amos Lawrence.

Recently, in Boston, and very suddenly; it is said within fifteen minutes from the immediate alarm, this excellent man ceased to breathe. He was one of my warm personal friends, and I always received a cordial welcome at his house. His age is reported sixty-seven; he appeared to be older, being very infirm in health, and for many years unable to eat with his family, and often appearing to be near death. But he was very cheerful, affectionate, and benevolent. He gave largely of his means to charitable purposes, and his wealth was great. He was always seeking out the poor and neglected, and made them his peculiar care. He

* Except Dr. Dwight.

was, by religious conviction, a Unitarian, but his temper and his action were those of a man of heavenly mind. I always visited him when I was in Boston; and when * I informed him that I had been invited to open the Lowell Institute, and to give the first course of lectures in it, he raised both his hands and exclaimed: "God be praised!" Such was his real liberality, for he knew that I was not a Unitarian. Of the five noble brothers, with whom I became acquainted on going to Lowell to give a public course of lectures in 1834, three are now dead.

Soon after the annual Commencement of 1852, he had given notice, in the following letter, of his intention to lay down his College office at the end of the academical year.

TO REV. THEODORE D. WOOLSEY, D. D., PRESIDENT OF YALE COLLEGE.

September 21, 1852.

REV. AND DEAR SIR, — The reasons which, three years ago, induced me to tender the resignation of my office in Yale College, having gained strength by the progress of time, I have come to the conclusion that the interests of the Institution and my own, unite to indicate the termination of the current academical year, as the period when my resignation shall be again offered to the Corporation. I am, I trust, duly sensible of the favorable regard which led both that body and my colleagues to desire my continuance in office, and I cannot contemplate, with indifference, the dissolution of those ties which, for more than half a century, have bound me, in both duty and affection, to our venerable Alma Mater. Upon mature reflection I am, however, led to believe that a notice thus seasonable will afford time, before the next Commencement, to make such an appoint-

* In a call at his house in, I believe, 1839.

ment as shall prevent any injury to the interests of the College and of the country.

With the greatest respect and cordial regard, I remain,

Rev. and dear sir,

Very truly yours,

B. SILLIMAN.

At the approach of the next Commencement, still persisting in his resolution to retire from his work in College, he copied this letter to President Woolsey, and sent it together with the communication which follows: —

TO REV. PRESIDENT WOOLSEY.

YALE COLLEGE, *July* 22, 1853.

REV. AND DEAR SIR, — My views not having been changed since the date of my preceding letter of September 21, 1852, — of which a copy is annexed, — it remains only to request you, sir, to communicate this paper to the Corporation. In taking my leave I wish to express my high respect for the Board under which I have so long acted, and to record my grateful remembrance of the kind, just, and liberal treatment which I have experienced at their hands. This acknowledgment, alas, cannot now be made to the men who, with President Dwight at their head, while I was still a youth, bestowed upon me their confidence in advance. That Board enrolled among its members the names of great and wise and good and honored men, who have all passed away, but they have been succeeded by those who have worthily filled their places. In the year 1799, I was invited to instruct a class in Yale College, as their tutor, and, in 1802, the responsibility was committed to me of founding an extensive department of physical science, then unknown in this institution, and little known in this country. Of the result, it is not for me to speak. Now, near the close of my labors, I look around, and almost

in vain, for the colleagues and fellow-laborers of that remote period; and among them, I find only a solitary individual survivor, "Clarum et venerabile nomen"; serus in cœlum redeat. As, by God's blessing, my health is unimpaired, I am not constrained by infirmities to resign my post of duty; but I think it right to retire before that necessity shall arise. The interests of Yale College, having been identified with almost my whole life, will ever remain very dear to me, and I shall be still happy to promote them by any effort and influence in my power.

I remain, Rev. and dear sir,

Very respectfully and truly yours,

B. SILLIMAN.

The attention of the assembled graduates at Commencement, was taken up by the death of Professor Kingsley, and the resignation of Professor Silliman. The extracts which follow, are from the Diary.

Wednesday, July 27, 1853. *Day before Commencement.* — A meeting of the Alumni was held in the Linonian Room, in the new Alumni Hall, A. N. Skinner, Esq., in the chair. The necrology for the year was read. The number of deaths among the Alumni during the year had been over sixty, and among them were three of our Professors, — Kingsley, Norton, and Stanley. After the necrology was finished, I was invited by the chairman to say something of Professor Kingsley. My remarks were, however, not much extended, as I preferred to refer, for a masterly exhibition of his character, to the excellent published discourses of President Woolsey and Professor Thacher, who had very skilfully dissected a character whose principal traits were not superficial, but lay deep in the mine of his intellectual and moral nature. I spoke of the early union of the three, — Day, Silliman, and Kingsley, — in office in Yale College, a union which was continued in great harmony during nearly fifty

years. Such a coincidence, it was believed, had never happened before in this country. We were men of different temperaments, but counterbalancing qualities, as happens with contrasted chemical elements, produce a more perfect and firm union. I referred to my venerated, surviving friend, President Day, then present, but refrained from eulogy, which would have been painful to him. I adverted to the breach of our trio, by the death of Mr. Kingsley, and to our separation from Yale College, by the resignation of President Day, and now, by my own, which was made the day before to the Corporation. I added that I did not retire on account of infirmity, as by God's blessing, my health remained unbroken, my eye not being dim, nor my natural force abated. This I acknowledged gratefully, and not boastingly. I resigned because the proper time had come, — the same age at which President Quincy, President Day, and Professor Kingsley retired; and I followed their example. I wished to go out before I should be compelled by infirmity, and to march out of the camp with colors flying. I spoke of the changes that had taken place in Yale College in my time, and of the combined efforts of the Faculty. My son followed, with interesting remarks upon Professor Norton, — notices historical and biographical. Professor Olmsted made a brief address upon Professor Stanley. The chairman made an allusion to the resignation of two of the Professors, when I retired. Professor Olmsted then addressed the meeting, and gave a history of my department, and of my success in it, and of the effect upon the Institution and the country. . . . . When he had finished, I returned into the meeting. Dr. Cox then rose and resumed the theme. I supposed he would be brief, and did not withdraw. He said many gratifying things upon the effect produced on his own mind by reading my early travels, especially on account of their religious bearing upon his youthful, and as he said, "half heathenish mind." His remarks were touching, and drew

tears from my eyes. Dr. Cox, many years ago, told me that the first serious impressions ever produced upon his own mind, arose from his reading my remarks made upon the impropriety of attempting to represent the supreme Jehovah upon canvas. This subject was mentioned by me in connection with a visit to a picture-gallery in London, in the summer of 1805.* General Williams of Norwich, mentioned my honored mother and grandfather Fish, and my father was also named by another, and his captivity; and a letter was referred to, written to my half-brother, John Noyes, then in College, by his and my mother, and marked by the tears which dropped from her eyes upon the paper.

In the afternoon of the Commencement, Lynde Alexander Catlin, in a dissertation upon the "Revolutions of Science," mentioned me and my labors with warm approbation. On the evening of the Commencement, by President Woolsey's suggestion, my house was opened at eight o'clock for the calls of the Corporation, the Faculty, the Alumni, the graduating class, and strangers. I should judge that from two hundred to three hundred called in the course of the evening, and there was great cordiality both towards each other and towards me, and I received many warm adieus. Thus I have finished my regular connection with Yale College, after having been almost fifty-four years an officer of the Institution, — three years a tutor, fifty-one a professor, and almost fifty a lecturer. It is a solemn period of my life, and I feel greatly relieved in being released from responsibility. I seem to have attended my own academic funeral, and many to be the mourners on the occasion. It is a great happiness that my son and son-in-law (J. D. D.) have been thought worthy to succeed me in my duties. My onerous professorship is now divided, and those who may hereafter sustain the duties, will find them less oppressive

* The picture was in the Truchess Gallery, which I visited in company with the late John McCrackan.

than I have done. I am grateful to God, and to many friends, for the numerous favors I have enjoyed in my public life.

But his instructions in College were not yet at an end. The Corporation passed resolutions expressing their sense of the great value of his services to the Institution, at the same time requesting him to continue in the Academical and Medical Faculties as Professor Emeritus, with the right to vote in each whenever he chose to exercise it. Mr. Dana, his son-in-law, succeeded to the department of Geology and Mineralogy, while his son, Mr. Benjamin Silliman, Jr., already a Professor in the Scientific School, was appointed Professor of Chemistry in the Medical School, and charged with the instruction of the undergraduate students in that branch. At the suggestion of President Woolsey and Professor Salisbury, by whom, in 1850, a generous contribution had been made towards the endowment of the chair, the department which Mr. Dana assumed was styled the *Silliman Professorship of Natural History*, and is now known as the *Silliman Professorship of Geology and Mineralogy*.* Mr. Dana not being able to commence at once in his department, Professor Silliman was requested to continue to give the lectures in Mineralogy and Geology, until his successor should be ready to take his place; and with this request he complied. But this temporary duty was comparatively light, and he felt that his official service was now over. He thus records his satisfaction and gratitude: —

* Professor Dana was born in Utica, N. Y. His family was of New England origin, his grandfather and Rev. James Dana, D. D., of New Haven, having been brothers. — F.

Sabbath Morning, August 7, 1853. — This is the last day of my seventy-fourth year, and to-morrow, if I live, will be the first of my seventy-fifth. Through my whole life I have experienced innumerable mercies, shaded by afflictions, chiefly in the removal of dear friends. But many of them were aged, and departed in the fulness of years and of a mature piety. Now, for the first time in almost fifty-four years, I begin a new year without feeling the responsibility of Yale College resting, in a measure, upon me. I have been carried through my long course of public duty successfully, and retire with a general and strong expression of good-will and esteem. My children are glad that I have resigned while my faculties are unimpaired, and when regret for the loss of my services is generally expressed. It remains only to await my final call to resign my life into the hands of my Maker. I hope to go cheerfully, humbly depending upon my Saviour.

CHAPTER XXII.

CORRESPONDENCE WITH DR. HITCHCOCK: LETTERS OF AGASSIZ.

Geology and Genesis. — Views of Professor Silliman. — Dr. Hitchcock proposes to Study in New Haven; on the First Chapter of Genesis. — Professor Silliman to Dr. Hitchcock on the Death of his Child; on the Method of Studying Chemistry; on Professor Stuart's Geological Remarks; on the Bird-Tracks. — Dr. Hitchcock on his Geological Critics; on the Spirit of his Writings. — Professor Silliman on the Clergy; on Wiseman's Book; on the Bird-Tracks. — Letters to Dr. Spring on Geology and Scripture. — Letters from Agassiz. — Agassiz on his own Visit to England; on his Studies; on Mr. Redfield; on the "Journal of Science"; on his Work on Glaciers; on his Proposed Visit to America: Announces his Arrival in Boston.

THE subject of the relation of science to the Bible was forced upon the attention of Professor Silliman by the bearing of geological evidence upon the question of the age of the globe, and especially by the opposition to geology on the part of a numerous class of theologians. The Bible had been understood to teach that the earth and all things upon it were made about six thousand years ago in six days. It was natural that students and believers of the Bible should be startled at hearing that the work of creation began ages before that date, and extended through vast and well-nigh immeasurable periods of time. How could such declarations be reconciled with Genesis? 'It is remarkable that theology at a former epoch had been puzzled with

the question, how the work of creation could have continued *so long* as six days, seeing that it was accomplished by a fiat of the Almighty?* It was natural that some should find it difficult to abandon the ancient and uniform interpretation of Scripture for the sake of accommodating the latter to the deductions of a new science. They considered that the change of interpretation that was demanded was inconsistent with a sound method of exegesis; and that either the doctrine of the entire infallibility of the Bible must be surrendered, or geology be rejected. Such was the view, for example, of Professor Moses Stuart. They naturally chose the latter branch of the alternative. But it must be confessed that the proofs which geology offered were often disregarded, or disposed of in an uncandid way. One would think that very little reflection was requisite to show that the mighty phenomena of displacement and deposition which geology pointed out, could not be referred to the Noachian deluge, to which they had been popularly ascribed, and that the theory of the creation of the fossils in the rocky beds where they lie, is contrary to all right ideas of creative wisdom, and is a form of irrational scepticism. Professor Silliman was embarrassed in this conflict by his sincere respect for the teachers of religion, and his reluctance to lower the estimation in which they were held. Hence, whatever he published on this theme, is characterized by the utmost forbearance and courtesy. For his own part, he felt that the Bible was a revelation from God. Its teachings were daily "a lamp to his feet." Not being in the

* See Poole's Synopsis, *Genesis* i.

habit of resorting to the Scriptures for information in physical science, he had valued its early pages for the pure and sublime theism which they inculcated. Yet he felt certain that they could not be in contradiction to the truth which is derived, by the sure path of induction, from the study of nature. He was not at all satisfied with the hypothesis that the present earth was formed from the ruins of an earlier world, rearranged and set in order during the six days of the creation. The supposition of such an earlier world, and of a great catastrophe causing its destruction, seemed to him to be neither consonant with our ideas of the Divine wisdom, nor sustained by geological evidence. He was impressed with the observation of Cuvier, that the cosmogony in Genesis, "considered in a purely scientific view, is extremely remarkable, inasmuch as the order which it assigns to the different epochs of creation is precisely the same as that which has been deduced from geological considerations." At the same time, Professor Silliman judged that it was no part of the object of the sacred writer "to enter further into details than to state that the world was the work of God; and thus he was naturally led to mention the principal divisions of natural things, as they were successively created." Nor did he deem it necessary to suppose that the author of Genesis, however instructed by a higher light, was himself cognizant of the truths of geology, especially the truth of the great antiquity of the globe, and the length of time consumed in the geological changes. In the defence of geology against the assaults and objections from the side of theologians, he sympathized with his friend, Dr.

Edward Hitchcock. In this conflict they were glad, as will be seen, to have the aid of Professor Kingsley, a critic whose Damascus blade never failed to leave whatever field he entered vacant of foes. The correspondence between Professors Silliman and Hitchcock, from which brief selections are given below, is voluminous, and relates to a variety of matters; but the contest of geology with its theological antagonists is a prominent topic.

FROM DR. EDWARD HITCHCOCK.

DEERFIELD, *January* 29, 1819.

. . . . . SOME months since I left the Academy in this town, and am now studying theology as much as my health will permit. It is my wish and my intention to come to New Haven the ensuing spring, to prosecute this branch under the instruction of Professor Fitch. I saw him when I was at that place last fall, and have just written to him on the subject. I hope I shall not be disappointed in this calculation, for I have been confined almost all my life to this town by a variety of untoward circumstances, and hope that I am not insensible that I greatly need instruction superior to what can be expected in an ordinary country town. One thing, which I confess is no small motive for inducing me to come to New Haven, is the hope that it may be consistent with the regulations of your College to permit me to attend the lectures of yourself and Professor Fisher. My eyes will not suffer me to attend closely to reading, and if I could have this privilege, it would be a great advantage as well as pleasure to me in my leisure hours. Pray, sir, do the laws of your College permit access to your lectures to one who is not an alumnus of it? . . . .

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *August* 18, 1820.

MY DEAR SIR,—. . . . I think you got off well between Moses and the divines; the latter, I suspect, were willing enough to get rid of the subject. I have become still more convinced of the truth of the new views, and am satisfied they will ultimately become general among men, who are at once acquainted with geology, and disposed to reverence the Scriptures. No mere divine, no mere critic in language, can possibly be an adequate judge of the subject; or deserve unqualified deference, however able in other respects. . . . .

FROM DR. EDWARD HITCHCOCK.

CONWAY, *October* 20, 1823.

. . . . . I LATELY preached a sermon before the Pittsfield Medical Institution, in which I have *come out* with the new views in regard to the first chapter of Genesis. It is now in the press, and I hope you will pardon me for referring to your lectures, as an instance of the defence of such views in this country. My statements must be propped up by some good authorities, or they will be disregarded, since our divines generally do not, as you have remarked, understand even the elements of the subject. I mean to send you one of the sermons when they come out. . . . . .

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *March* 20, 1824.

MY DEAR SIR,—I most cordially and feelingly condole with you, on the late afflictive bereavement in your family. I know indeed, from costly experience, every pang you have suffered, and hope you may sooner recover from the shock than I did from my first loss of this kind,—that of my eldest son. You will present my respectful condolence to Mrs. Hitchcock, whose sufferings will of course, embrace,

all that belongs to yours, with the addition of what a mother only can know.

But perhaps we are selfish in mourning so deeply for those that are "bone of our bone, and flesh of our flesh"; for it is the irreversible order of Providence, that we must lament or be lamented, and the only condition of protracted life is the chance of new sorrows from the death of those whom we love. The sooner we come to the habitual contemplation of the absolute uncertainty of all our possessions, and to an unqualified resignation of mind to part with them whenever called for — the better.

The death of infants, and of other very young children, is always attended (in my view) with so much consolation, that I can look upon the calm, sweet expression of their little bodies sleeping in death (not excepting even my own children) with a degree of pleasure which has little alloy. For I consider the declarations of our Saviour, as deciding the point that his sacrifice will cancel their original taint, and neither Scripture nor reason will justify us in believing that there will hereafter be a penal retribution awarded to anything but actual transgression. The death of half mankind within the age to which I allude, I consider as evincive of the mercy of God to our fallen world, in removing so large a part of its population before they have become, in any responsible sense, moral agents. I know that these views interfere with metaphysical divinity, which I value little compared with the consolations which I think I have a right to draw from the Scriptures. I am very sorry your anxiety should have been increased by unskilful medical practice, but I have followed to the grave four of my own little flock, whom the skill of the wisest and most devoted physicians could not save. . . . . .

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *July* 27, 1825.

MY DEAR SIR, — I have been compelled by unavoidable

exigencies to delay till now answering your letters of May 30 and July 12. As to a professorship, my impression is that if your duties are reasonable in extent, and your compensation such as to excuse you from the necessity of doing extra duty in order to earn money to live, and also such as to permit you to spend your vacations in recreation, — at least as far as it shall prove necessary, — that then your chance for lasting would be as fair as anywhere. . . . .

As to undertaking a course of chemical demonstrations without a previous apprenticeship in the practical part, I must say that I think you would meet with much embarrassment, and lose much time and expense which must be saved by going through with an experienced person, and your standard of excellence would probably be lower. Should you conclude on any such arrangement, you need not be assured that I should do everything in my power to aid you. As to your relation to your people, I should be very sorry to do anything to impair the cordiality or destroy the permanency of a connection, which I understand from Mr. Morey and others, is highly useful and agreeable; and I should hesitate much as to the course of duty, unless there is really a prospect of your obtaining better health, and moving in a more extensive sphere of usefulness. On this topic I confess myself unable to form a decision. I believe your services particularly valuable in your parish, and in your community, especially in the present crisis of religious controversy. I do, however, believe that you would excel in scientific pursuits, and other things being equal, I could wish you to be placed in a situation to indulge your peculiar dispositions on this subject, and to bring your peculiar powers into action. Should you adopt the semi-agricultural plan, and the semi-scientific, I would most cheerfully aid you in procuring a proper situation, as far as might be in my power. . . . .

Hoping that your health may soon be restored, I remain, my dear sir, with the best wishes for your welfare, very sincerely your friend.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *June* 1, 1827.

MY DEAR SIR, — . . . . . I am very glad to hear that your health is so much better; but I am sure that you could not have been quite *done over* at New Haven, or you could never have written that energetic description of weakness, and drawn that animated and bright picture of gloom and darkness, which you gave us in the "Christian Spectator." It was very well done, but it almost persuades me that I was only a borderer upon the domain of dyspepsia, and that I never penetrated into the heart of the empire.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *March* 11, 1830.

MY DEAR SIR, — . . . . . I only glanced at Mr. Stuart's geological remarks. My previous correspondence with him showed me how poor a judge he is of such matters, and I must include nearly all our theological gentlemen here, who discover no disposition to listen to reason and evidence on this subject.

If one had health and time, it might be well to open the subject; but I have not, and I shall only talk and write as I think, without regard to the obstinacy of those who will neither listen nor learn. I should be very glad to see you engaged with them, if your health will sustain you, but I think you had better be on your guard till you are firmer. I see nothing of Buckland's second volume. I am greatly gratified with your favorable opinion of the chemistry.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *February* 24, 1832.

DEAR SIR, — . . . . . I am glad you are pleased with Mr. Whitney's life;* much more might have been said, but enough is said to show that Mr. Whitney and the Cherokees received very similar treatment; and that the Georgia

* Mr. Eli Whitney, inventor of the cotton-gin. — F.

people are the same that they were thirty or thirty-five years ago. As to Mr. F., I suppose I have seen what you alluded to, — a foreign criticism written, I presume, by F. himself. I and my works are a standing topic of sneer or attack with him, but he has the game all to himself, as I do not reply, nor do I feel any serious interest in anything he can say about me.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *August* 6, 1835.

MY DEAR SIR, — I am much gratified that you are seriously at work upon the turkey-tracks or bird-tracks of whatever kind they may be, and you may rest assured that I shall publish nothing upon the subject until I receive it from you. I will, therefore, expect you to do justice to Dr. Deane, as you are perfectly acquainted with the circumstances, and if you see Dr. Deane, I will thank you to intimate to him what I have just said. My impressions are so strong in favor of the genuineness of the discovery, — judging only from the imperfect copy I have in plaster, — that I feel exceedingly desirous to have the matter investigated, and I do not know in whose hands it can be better placed.

It would be a most interesting geological conclusion to establish, that there were birds at so early an era as the new sandstone, and especially that turkeys were gobbling and strutting so long before their rival, — man.

TO DR. EDWARD HITCHCOCK.

February 24, 1836.

I WRITE to apprise you that Professor Kingsley, having perused Mr. Stuart's review of your geological discussions, saw at once that the learned but over confident and vaunting theologue had laid himself open to an unanswerable reply, and I encouraged him to make it. He has done it in a

masterly manner, and with his characteristic acumen. The drift of the argument is this: Professor Stuart has laid down a canon of criticism which he has not in a single instance applied through his entire voluminous dissertation; had he applied it in such a manner as he has propounded it, it would have run him into the greatest absurdities, to avoid which he has himself proceeded upon such principles as, if followed out, would allow the geologists all they ask for. . . . . There will still be time for you to say that you do not wish these criticisms published, provided you feel so; but if you feel as I do that it is something to have gained to our cause such an ally as Professor Kingsley, I presume that you will not object, especially as the geological ground is all left open to you.

FROM DR. EDWARD HITCHCOCK.

AMHERST, *August* 16, 1836.

. . . . . I CERTAINLY feel deeply indebted to you for your open and generous defence of my ornithology. I hope you have not thereby incurred the hostility of any whose friendship is valuable. I expected that my article on that subject would be attacked; and I can only say that my wish is that all assaults may be as futile as that of Mr. C—— appears to me to be. Dr. P—— I have always supposed regarded me rather contemptuously, and I doubt not but that, apart from my real inferiority and inaccuracy, there is a cause why he should not like me. I have endeavored always to show that there is harmony between science and revealed religion, and I have no doubt but he supposes there is a discrepancy. In spite of all his sneers about the bird-tracks, however, and in spite of Mr. C——'s arguments, I am more and more convinced that they will hold their place. My strongest wish is that all the gentlemen who are sceptical would come to Amherst and look at my specimens. Even the casts which I have sent abroad do but

very poor justice to the originals; or rather of my large and most satisfactory specimens, I have taken no casts. I wish that you could see them. Can it be that Mr. C—— feels injured by me? A few years ago he sent me some facts in relation to the rocks bordering on Massachusetts, and, if I rightly recollect, I never replied to his letter on account of some doubt as to his place of residence. But I inserted nearly all of his letter in the second edition of my report, (pp. 353 and 410,) with as handsome a bow of thanks as I could make. He quotes, I see, from my first edition; does he know the use I made of his letter? And does he not feel hurt by my apparent neglect? I have sent on an answer to the "Knickerbocker," and if the editors do not insert it, I mean to get it into some widely circulated newspaper. I have made up my mind not to be greatly disturbed by these attacks, unless they appear to me more forcible than those of Professor Stuart and Mr. C——. I know that my writings abound in vulnerable points, and that many things in my character, habits, and connections, are well calculated to stir up prejudice and invite attack. Nevertheless, I am determined to push ahead, though in some seasons of despondency I feel inclined strongly to give over any further scientific efforts. But so long as you and a few other scientific friends shall think that my efforts do any good, I mean to hold on, if life and strength be spared. . . . . .

FROM DR. EDWARD HITCHCOCK.

AMHERST, *March* 12, 1837.

. . . . . I THANK you for your rebuke respecting the personalities in my writings. *Let the righteous smite me: it shall be a kindness*; and let him *reprove me; it shall be an excellent oil which shall not break my head.* I confess I was not aware that the fault which you mention was one to which I am particularly prone; but this is no proof that I am not. I wish, however, to make a few remarks upon

the two cases which you mention; and, though they may not justify me, perhaps they may be some palliation of my offence. In the first place, I have never written anything with more reluctance than the censure which I wrote upon Dr. Macculloch and Mr. Lyell. The writings of the former have always been studied by me with great pleasure and profit, and even when I saw the exhibition of a spirit not only unchristian, but unmanly, I coupled my reproof of it with one of the highest compliments I could pay him, by comparing his work to the "Principia" of Newton. Mr. Sedgwick, as President of the London Geological Society, expressed as severe a censure upon him as I did, without any compliment. And as to Mr. Lyell, I had studied his works with great profit; and I knew, too, that he was President of the Geological Society, and possessed of great influence; so that, if my remarks should ever reach him, they would not only cast me out from his favor, but also, probably, from the good opinion of nearly all the distinguished geologists of Great Britain. Nevertheless, I have always tried to make it my rule of action not to let private and personal considerations prevent me from a decided vindication of revealed religion from all covert or open attacks. I have sometimes gone further, — perhaps unwisely. By no scientific man in our country have I been treated with greater courtesy and respect than by Dr. Cooper. Yet, knowing his hostility to religion, I could not in conscience let a fair opportunity pass, that presented itself, of avowing my reliance on a crucified Saviour, and of kindly expressing my regret that he — just on the borders of eternity — should not have such a rock to rest upon. The consequence was, as I expected, that all intercourse between us has been suspended. But my conscience is quite at rest on the subject. On the same principle, in the same paper that contains my remarks upon Mr. Lyell, I have censured much more decidedly the anti-christian sentiments of M. Boue, President of the Geological So-

ciety of France.* I know that it may seem presumptuous for an obscure individual to assail men in such high places. But, in relation to those who seem to me to assail Christianity my motto has always been, "Tros Tyrinsque, mihi nullo discrimine agetur."

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *March* 17, 1837.

. . . . . IN all your principles of action avowed in your letter I entirely agree; and Drs. Cooper and Boue richly deserved the protest you entered against them. I thought, however, that the evidence ought to be much stronger to justify placing Mr. Lyell in the same company, and particularly with the aspect given to his character and mind. I have not yet examined his last edition, and cannot say whether your impressions would be strengthened or not by the perusal.

I also have the happiness to reckon some of my best friends among the clergy, and I believe, with you, if they were masters of our subject, they would think as we do. Some of them are candid and forbearing; others find no insuperable difficulties; others are silent because they feel that they do not understand the matter; but a few are loud, confident, and uncharitable, while it is obvious that they know not whereof they affirm. I think you have silenced one of this class, — at least you and my colleague, Professor Kingsley; but I see strong marks of a settled purpose on the part of some to hold no terms with geology, and to insist upon the literal and limited understanding of the history; but they will find themselves deserted, for the matter will in time come right.

FROM MR. EDWARD HITCHCOCK.

AMHERST, *April* 11, 1837.

. . . . . HAVE you read Dr. Wiseman's work, just pub-

* Dr. Hitchcock's unfavorable impressions in respect to Mr. Lyell's religious opinions were modified or removed, as appears from a subsequent letter. — F.

lished at Andover, on the connection of science and religion? It ought to shame those Protestant divines (he is Catholic) who are battling the geologists. It is said that Professor Stuart was highly pleased with the work, and yet the author falls in with the views of geologists respecting the age of the world. I am satisfied with you that some of our theologians are determined to wage everlasting war with geology; but calm argument, and such works as that of Dr. Buckland, will silence if they do not satisfy them. . .

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *April* 15, 1837.

. . . . . DR. WISEMAN'S book I have read, and you will observe that I have inserted a short notice of it in the April number of the Journal; it was written by my son, but expresses my own opinion. It *was* my intention to review Buckland, and, in connection with him, to present our case forcibly but decorously to the public.

As you say, I would be calm, but always respectful; but I am less disposed than ever to shrink from this conflict; it must be sustained until the truth is triumphant.

That these subjects are of some interest to our country, may perhaps appear from my having been invited this season *in form* to New Orleans, Cincinnati, Syracuse, and Bridgeport; and I understand New York is about to speak again through the Mercantile Library Association.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *April* 29, 1840.

. . . . . I HAD not heard of the New York incubation. You and I *know* that any attempt to impair geological evidence, or to reconcile it with the popular view of time, must be abortive. No matter how violent or bitter our assailant may be, doubtless he will be more so in proportion to his ignorance of geology and to the strength of his

prejudices. We can have no occasion to fear such an attack, and must judge when the work appears whether it is worthy of a reply.

TO DR. EDWARD HITCHCOCK

NEW HAVEN; *May* 25, 1841.

MY DEAR SIR, — Before yours of the 20th arrived, I had already laid out, to go by Mr. Shepard, Agassiz's plates of the glaciers, and also the plates of several other of the works of the same author. . . . . I confess myself unable as yet to give an opinion worthy of your attention on the theory of Agassiz. Dr. Mantell writes me that it has a great run among the geologists, but he thinks they have too eagerly jumped to a conclusion, and evidently holds back. I shall study it as soon as possible, but — my time — my time! I have just taken up my pen again after an interruption of five or six hours by a succession of strangers. I return your proof, altering only one word. I am glad that Mr. Lyell stands acquitted of infidelity. You may remember I did not judge him quite so unfavorably as you did.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *October* 13, 1855.

. . . . . I ADMIRE your courage in securing that grand specimen from Turner's Falls, and I hope one day to see it, and, perhaps, other acquisitions. Should our early conclusions be subverted, and should we be drawn from an aviary into a frog-pond, we must even submit and agree to croak, if we may not cackle or crow. *Fiat veritas!* We were much amused by Professor Shepard's brilliant thought, whereby, also, hangs a tail, — of a reptile if not of a struthious bird or other bird that wore a tail. . . . . Need we give up the birds? To my eye, many — very many — of the impressions appear as indubitably ornithic as tracks of indubitable living birds, made yesterday in clay or mud, and so said the acute and unprejudiced President Day, when he

first saw your collection many years ago. Has any reptile three toes? Has any reptile four?

The courtesy which Professor Silliman continued to show toward clerical sceptics respecting geological truth, even long after the main conclusions of geology had been generally accepted among educated men, is illustrated in the following letters addressed to the venerable Dr. Spring, with whom he had previously conferred on this subject.

TO REV. GARDINER SPRING, D. D.

NEW HAVEN, *July* 24, 1854.

MY DEAR SIR, — The enclosed little tract was written fifteen years ago, and contains only an extremely condensed statement of facts regarding the structure and age of the earth, and it has been confirmed more and more by subsequent observations and discoveries.

Should you find an unoccupied hour in which to give it a perusal, you will perceive that the conclusions of geology are the result of extended and honest investigation. In these conclusions, as regards the extent and order of time, all geologists agree, whatever hypotheses may have been put forth by individuals upon particular subjects. This little tract formed a preface to an edition, which I published, of Dr. Mantell's "Wonders of Geology"; it falls very far short of a full presentation of the facts, of which another tract of mine contains a more ample statement; but the perusal of this might impose too heavy a tax on your time. Could I speak to you during the twenty-five daily lectures which (D. V.) I expect to give in May next, (my concluding course,) with the aid of numerous fine drawings and all requisite specimens, I trust I could convince you that geology is not a dream, and that as believed and taught by religious men of competent attainments, it presents a demon-

stration of the truth of the Mosaic history, which nothing else can afford.

As, however, you cannot, even if disposed, give me the opportunity of laying the evidence fully before you, I cannot expect to convince you by the few pages which I now send; but they may serve to vindicate me from the appearance of arrogance and presumption in the hasty and rather abrupt remarks with which our interview in the "War Eagle" terminated. I have no sympathy with the speculations to which you then alluded.

With the Bible in my hands, and the world before me, I think I perceive a perfect harmony between science and revealed religion, and it is still more ably sustained in the late work of Sir David Brewster * on the "Plurality of Worlds," which you have doubtless seen. When we parted, you justly remarked that truth is our common object. It cannot be doubted that there is a perfect harmony between the works and the word of God. It is devoutly to be desired that this harmony should be perceived and acknowledged by all the friends of truth; and it is my mature conviction that a full and just comprehension of the works as well as the word of God, will conduct all honest and intelligent minds to the same conclusion.

With high respect, and the most agreeable recollections of our late protracted interview, I remain, my dear sir, with kind regard,

Truly your friend and servant,

B. SILLIMAN.

TO THE REV. GARDINER SPRING, D. D.

NEW HAVEN, *September* 10, 1854.

MY DEAR SIR, — I ought, ere this, to have thanked you for your very kind letter of July 26, in reply to my note of

* A sage equally distinguished for science and piety. In my youth I enjoyed the honor of his personal acquaintance, and have corresponded with him since.

the 24th with the accompanying tract. I am glad to be in possession of your views, conveyed as they are with Christian fidelity and gentlemanly courtesy.

I have, elsewhere, given my reasons for believing that we are acquainted with the physical materials of the earth to a great and unassignable depth, and with its arrangement far below the deepest seated record of life. "The scratch of a needle upon the varnish of an artificial globe," conveys only a very erroneous and inadequate impression.

Omitting the consideration of the great physical powers that have wrought out the present mineral condition of the planet, we have ascertained the point in the strata beneath which no record of life appears, — the date, therefore, at which life began, and above which the progress of the creation of animated beings is fully recorded in strata of miles in depth, commencing with the earliest marine animals and marine plants, and proceeding upward in stratigraphical order, and downward in time, through all the varieties of ancient life, until we arrive at the human era when man first appeared on earth.

It is in perusing this record, so distinct, so full, and so orderly, that the geologist arrives at the inevitable conclusion, that all the time necessary to these successive creations, and to the growth and action and sepulture of these millions of millions of beings, was actually allowed, along with that requisite for the deposition of the universal matter in which these venerable relics are enclosed.

This exegesis of life in the planet is no doubt consistent with that of the sacred record, and this I endeavored to prove* many years ago, when, so far as I *know to do good*, I endeavored to do it, and thus to vindicate myself from the sin of omission.

In these few remarks, my dear sir, it is not my intention to enter on discussion, but simply to state the case as it exists in my own mind, and there for the present to leave

* In a full appendix to Bakewell's *Geology*, New Haven edition, 1839.

it. Should I hereafter have an opportunity to present to you a selection of the proofs, I would then leave it with your own enlightened, honest, and honorable mind.

Mrs. Silliman unites in kindest regards to Mrs. Spring and yourself with, my dear sir, yours,

Very truly and respectfully,

B. SILLIMAN.

Professor Silliman had been in correspondence with Professor Agassiz long before the latter had formed the plan of visiting the United States. Professor Silliman was wont to say that of his foreign correspondents, it was Agassiz and Mantell that "showed heart as well as head." The early recognition of the scientific labors of Agassiz, which reached him "in the midst of his native mountains," from a source so remote, was most grateful to his feelings.

The letters of Mr. Agassiz are here presented in translations.

FROM PROFESSOR AGASSIZ.

SIR, — While spending some days this summer with Dr. Mantell at Brighton, I begged him to send you the two first volumes of my researches on fossil fishes. I was then too much occupied with the examination of the magnificent collection of your friend, whom I have now the pleasure of counting among mine, to add to the parcel in writing what I should like to say to you, — but the distance which separates us is too great for me to think of that.

To-day I send you the third volume of my work. You know so well how few resources the literature of this department of natural history affords us, that I can but hope for a favorable reception of my essay in your country. You would oblige me greatly by giving a little analysis of it in

your Journal. The preface will give you the most concise *résumé* of what I have done, and the results I have obtained. A journey in England this year has added largely to the number of species which I knew, and which now reaches eight hundred. I should be greatly interested also to learn more of the fossil fishes of America, which I find noticed in the "Manuals of Geology," and respecting some of which your Journal has given us valuable information. For a long time I have thus found myself connected with you, but this is the only connection I have with America, and I should think myself very fortunate if this intellectual exchange should become more intimate and direct. I should like especially to ask you for some details as to the discoveries on the subject of fossil fishes brought to light by the active geological researches of the past year. If on my part I can be of any service to you in the little corner where I dwell, I pray you to make use of me. A few months ago, Mr. Studer at last published his Geology of the Bernese Alps. It is an important addition to general geology, on account of the new and curious facts which it contains. Are you already acquainted with it? Even our Jura chain acquires a new interest for geological theories since we have discovered over a large area soils of the lower cretaceous formation, resting upon the upper rocks of the Jura. It is very singular that the rocks which have given their name to the whole formation, have now an exceptional character, and that their equivalents are found so far from the surface of our globe, with a very similar paleontological character. I know, for example, several species of squalus, whose teeth are found at Brighton, in Belgium, the environs of Paris, Bohemia, in Westphalia, in Switzerland, and in America. The study of fossils has made such rapid progress in your country, that we on the Continent find great trouble in following you, especially when, like myself, deprived of books, and obliged once a year to go to the large cities to read them. My intention is to return to England next year, and

I hope the reunion at Dublin may draw you, too, there. How delightful it would be to me to make your personal acquaintance there. If you had by that time made a collection of fossil fishes, I am convinced that it would greatly interest English naturalists, and in bringing such an one with you, you would not only oblige him who has the honor to write you, but also the whole geological section. I should not have taken the liberty to make this proposition to you, if Dr. Mantell had not promised to write to you on the same subject, and he did not doubt for an instant that your countrymen would emulate one another in favoring my researches, as the English geologists have done. If you would like the Swiss fossils, especially of Jura, and do not fear the cost of transportation, ask them from me without hesitation.

Receive, sir, the assurance of my high consideration, and believe me, your devoted servant,

L. AGASSIZ.

NEUFCHÂTEL IN SWITZERLAND,
January 6, 1835.

My third volume forms a parcel which will reach you, I hope, soon after my letter.

FROM PROFESSOR AGASSIZ.

YOUR pleasant letter was forwarded to me from Paris, during the month of May, by Mr. St. John, announcing that I should have the pleasure of seeing him at my home in the course of the summer. Mr. St. John did indeed come to Neufchâtel, but unfortunately during the few weeks when I was absent, so that I did not have the pleasure of showing him how pleasant it would be to me to receive any one introduced by you. I hope to be more fortunate in the future. . . . . .

I have seen with pleasure that your countrymen manifest such zeal for geology. So diligent an attendance on the part of an audience so numerous as yours does them credit, while it is at the same time the highest compliment to the

talent of the Professor. I feel much flattered that you can, under such circumstances, remember my work on fossil fishes. You must accept, my dear sir, my sincere thanks, also, for the trouble that you have taken, and may still take, to procure subscriptions for me. I do not despair of being able some day to testify my gratitude to you personally. A fortnight ago I finished the eighth and ninth volumes, — perhaps they are already in your possession. I doubt not that you have received the seventh also, though you do not mention it in your letter. As to the third, that you wrote me had not reached you, I shall hasten to send it to you, but I must first let you know that it has appeared without text, so that if you have the plates the work is complete. Will you write me, if you please, on this subject, so that I can send you that which is wanting.

Mr. Redfield, member of the Lyceum of Natural History in New York, has been kind enough to send me this spring his paper on fossil fishes, which he has described and determined with uncommon talent. It is, without doubt, the same that you mention. For the sake of science, it is greatly to be wished that this skilful naturalist should continue his researches, which seem to me destined to throw great light on the relative ages of the soils of Europe and America. I am at present occupied with a detailed description of the Echinoderms. I should be infinitely obliged to you, if possessing or being able to dispose of any remarkable species not yet described of these animals either living or fossil, you would have the kindness to send them to me. I would endeavor to keep them as little while as possible, and to preserve them from every sort of injury.

NEUFCHÂTEL, 12th *November*, 1837.

FROM PROFESSOR AGASSIZ.

MY HONORED FRIEND, — I received some time ago the numbers of your Journal which were wanting, and it has

given me great pleasure. I attach great value to this publication, which appears to me to be edited in a perfect manner; and since you are kind enough to offer to send me the whole series, I am not afraid to confess that by so doing you will render me a great service. Perhaps, my dear sir, I am trespassing on your goodness, the more that I have not yet been able to find the opportunity to prove to you how much I appreciate the interest you have felt for me; but I hope you will always make free use of me if I can be of service to you in any way. . . . . .

Already, my dear sir, you have had the kindness to remember me in the number before the last of your Journal, and while owning that I do not merit the too flattering praises which you bestow on me, I hasten to express to you my sincere gratitude for the warmth with which you have made me known to your countrymen. . . . . For several years I have calculated the possibilities of my making a tour in America, for I must say to you that I have the greatest desire to see that country, and to make your personal acquaintance. Up to this time my publications have not left me the leisure. I close, begging you to remember me to Mr. Redfield, who I hope pursues with zeal his paleontological investigations, and I expect from them great results. In the hope that you will send me news of yourself soon, I beg you to believe me always,

Your devoted,

L. AGASSIZ.

NEUFCHÂTEL, 5th *November*, 1838.

FROM PROFESSOR AGASSIZ.

. . . . . My work on glaciers, I think, of all my writings, is the one which will excite the most general interest, especially since the discovery I have recently made during a residence of several months in England, of their existence on an extended scale through all the mountain chains of Scotland, Ireland, and England, — a discovery which fully

confirms my theory. The English journals will, without doubt, have informed you in regard to it. The "Athenæum," and the "Literary Gazette," have given a detailed account of my observations on the subject, and those also of Dr. Buckland and Mr. Lyell. It is highly important that American geologists should study attentively the analogous phenomena which America presents.

Your very devoted servant,

L. AGASSIZ.

NEUFCHÂTEL, 8th *February*, 1841.

FROM PROFESSOR AGASSIZ.

MY DEAR SIR, — The serious illness of the Prince of Canino, has obliged him to give up the idea of a journey to the United States, and came near forcing me to renounce mine also. But the works of the American naturalists, which I have studied for several years, have inspired me with so great a desire to see your country, that it would have cost me much to give up the plan. Your letter had increased my desire still more, but the necessary resources were wanting to undertake so long a journey, when through the recommendation of M. Humboldt, his Highness the King of Prussia has put it within my power to realize my plans, and instead of going merely to pass some months in your country, I shall be enabled to extend my stay in America to nearly two years. It is a great pleasure to me; and I rejoice greatly in the prospect of passing so long a time in the midst of men whose learning and activity I have learned to appreciate, and to profit by the numerous opportunities I shall have to extend my acquaintance. But you know, my dear sir, one cannot leave one's home for two years without having to put many things in order, and it has been these preparations which have hindered my departure until now. I have even determined to finish all my works, which I have commenced to print, before starting. Now that I have almost accomplished this work, I wish to

look over our collections a little, before leaving Neufchâtel, so as to be well prepared to compare our European fauna and the fossils of our region with those of America. I shall still continue this same work in Paris and London for some weeks, so that I do not expect to arrive in the United States before the month of February or March. In the mean time I will send to you a package containing all that I have published since I had the honor of sending you my last publications.

After having finished these numerous works in the study, I have truly need to replenish myself anew in the fields, and I hope to reap a rich harvest in your country. I know not how to thank you enough, my dear sir, for all the information you have taken the trouble to send me; it has already been of great use to me in preparing myself for such a journey, and will still serve me as a guide on my arrival in your country, where I have no relations nor acquaintance among men of science, and only a few countrymen engaged in business, whom I know for the most part only by name. You are the only person in the United States with whom I maintain a correspondence. I wrote once to Mr. Haldeman, and once to Mr. Gould, without receiving any reply from the latter. So that really without your directions I should be extremely embarrassed on my arrival, for though I know the names of quite a number of your savans whose papers I have read, I am ignorant of their residence. I will follow your advice in regard to the collections which I shall bring with me. The duplicates which I hold as exchanges will remain for the most part in the hands of a friend, who will forward them as fast as I need them. All that you say to me of American naturalists and of their kindness, enchants me, and the time spent in America will surely be to me one of the happiest and most instructive epochs of my life. While anticipating the pleasure of taking you by the hand, permit me, my dear sir, to reiterate my thanks, and the assurance of my entire

devotion, and be good enough to present my warm greetings to your son.

L. AGASSIZ.

NEUFCHÂTEL, 20th *October*, 1845.

FROM PROFESSOR AGASSIZ.

"MY DEAR SIR, — In a few days I leave Neufchâtel for Paris, where I shall remain some weeks, before crossing to England, which I shall not leave for the United States probably before the month of April, desiring to thoroughly inform myself of all that is new amongst us in the domain of natural science, before leaving for a long time our old Europe. It would be difficult for me to say to you how much I anticipate seeing you, and making the personal acquaintance of all the distinguished savans of your country, whose works I have recently carefully studied. There is in the prodigious activity of the Americans something intoxicating, which has inspired me; and I already feel my youth renewed in the anticipated contact with the noted men of your young and glorious republic. I am infinitely obliged to you for all the valuable information you have given me, and which will be very useful to me on my arrival in Boston or New York. I cannot yet tell you precisely the time of my departure, nor whether I shall come to New York or Boston. My decision will depend on the time I am obliged to spend in Paris and London. If my departure should be postponed till the fine weather, I should prefer to make the passage in a sailing vessel, so as to make some observations on the sea and its inhabitants; if I am ready before, I shall choose the steamer from Liverpool, so as to shorten the passage in bad weather. In either case I will inform you of my departure as soon as it is irrevocably decided upon; and my first thought on arriving will be to take you warmly by the hand, and thank you sincerely for all your kindness to me.

As you know better than I what is best adapted to your

country, I leave it to you to judge of the propriety of announcing my arrival in your Journal, and to do so in the form most appropriate to the circumstances in which I find myself, and which I will again briefly detail to you. Knowing the great desire that I had to visit your country, and the impossibility of doing it at my own expense, his Excellency the Baron de Humboldt, who has always treated me as a friend, and whose good counsels have been to me like those of a father, proposed to the King of Prussia to give me the necessary funds for the journey, which his Majesty granted to me in the most generous manner, in furnishing me with a sum sufficient for a journey of two years, if travelling alone. However, desiring to profit by this opportunity to gather as much as possible of the materials of the natural history of the United States, my intention is to have a *préparateur* and draughtsman accompany me, so as to have drawn from life all the fishes of your rivers and lakes, which have not yet been properly represented; and also the mollusca of your coasts, which have not yet been sufficiently studied. But, to provide for the extra expense, I shall be obliged to live very economically, and in a manner little in accordance with the royal munificence which has furnished me the means of making this journey. . . . . .

My sphere is entirely circumscribed by the scientific world, and all my ambition is limited to being useful to that branch of science which I particularly cultivate. With all this, I am no misanthrope; but I learnt early that, when one has no fortune, one cannot serve science and live at the same time in the world. If I have been able to produce numerous expensive publications, it has been only by following this system of economy and voluntary seclusion; and the results which I have obtained thus far have rewarded me so well for the privations which I have suffered, that I have no temptation to adopt another style of life, even should I have hereafter, and especially in your coun-

ty, more trouble than I have had to sustain it in my own. But I have talked to you enough of myself, and I finish, commending myself anew to your goodness, and praying you to accept the reiterated assurance of my high esteem and entire devotion. Present my respects to your son and Mr. Dana,

And believe me for life, your obliged servant,

L. AGASSIZ.

NEUFCHÂTEL, *February* 1, 1846.

FROM PROFESSOR AGASSIZ.

MY DEAR SIR, — . . . . . You can see by this that if I appear in little haste to be in your country, it was from the desire to be there completely when I shall have crossed the Atlantic, and not to leave behind me occupations which could turn me from my desire and aim to study with care the zoölogy and the fossils of the United States, without neglecting the physical geography of a country containing lakes as remarkable as those which border your northern frontiers, and rivers as large as the Ohio and the Mississippi, which open new paths to civilization, by the mere fact of their direction; coasts so indented, on which the polar ices are exposed to the warm currents of the South; not to speak of the direction of the mountain-chains, of the configuration of the soil, of the trend of your great valleys, which form so curious a contrast with those of Europe.

All these, and many other facts which will present themselves to your mind more rapidly than I could enumerate them, are well worthy to fix the attention of a naturalist; and I do not know that I am mistaken in thinking that there are few countries in the world — if there exists one other — where one can study phenomena so varied, with as much facility as with you. So I make in advance a *fête* to myself in the prospect that I now have a glimpse of. Now I will say *au revoir* to you, and to the pleasure I shall have

in taking your hand, face to face. If you have anything in particular to say to me, perhaps your letter would reach me in England, by addressing it to the care of Mr. T. Denkel.

Adieu, my dear sir, *au revoir*.

Your devoted

L. AGASSIZ.

PARIS, *August* 14, 1846.

FROM PROFESSOR AGASSIZ.

TREMONT HOUSE, BOSTON, *October* 5, 1846.

MY DEAR SIR, — I hasten to announce to you my safe arrival in Boston, and to transmit some pamphlets which I have brought for you. As soon as I have taken my bearings here, I shall come to press your hand, and to thank you for all the attention you have given me.

In the mean while, believe me, always, your devoted

L. AGASSIZ.

Pray present my respects to Mr. Dana. I shall rejoice to make his acquaintance. His fine works have brought him a great reputation in Europe.

CHAPTER XXIII.

LETTERS FROM LYELL, MURCHISON, OWEN, DAUBENY, HERSCHEL, ETC.

Lyell on Professor Silliman's Lectures; on his own *Geology;* on Professor Silliman's Influence; on Revisiting America; on Mantell. — Lady Lyell on Professor Silliman's *Travels;* on the Marriage of her Sister. — Murchison on the Geology of Russia and of America; on Dana's Work on Corals; on Colonel Fremont. — Owen on the Footprints of the Connecticut Valley; on his own Labors in Anatomy. — Daubeny on his own *Journal in the United States;* on Liebig; on the Revolution in France (1848); on the Relations of England and America; on Education at Oxford. — Sir J. F. W. Herschel on the late Mr. E. P. Mason. — Letter from Professor Haidinger. — Letter from Professor Coneybeare. — Letter from Professor J. F. W. Johnston on Russia. — Letter from Professor W. B. Rogers.

A FEW of the numerous letters which Professor Silliman received from Sir Charles Lyell are here given. Professor Silliman's correspondence with eminent men of science is full of proofs of his unselfish zeal in forwarding their interests, at the same time that he was promoting the diffusion of useful knowledge.

FROM MR. (NOW SIR CHARLES) LYELL.

DEAR SIR, — If I had not made, as you will see by the Preface, a great many alterations in my new edition which I consider important, I should not venture to obtrude four volumes more upon your shelves; but, as you were so good as to state, in your last letter to me, that you had made use

of my third edition, I cannot allow you to continue to read my work in its less improved form. Mr. Murray has promised me that one of the first copies shall be sent to you. We print moderate-sized editions, because the science moves on so fast, and so many alterations are required; and at the price of twenty-four shillings, — which in this country is very small for such a book, — we gain but little; but hope to compensate by the rapidity of the sale.

I congratulate you on the unexampled success of your lectures, to which nothing in this country or in Europe can possibly come up in point of numbers. No one can lecture well to small audiences, or be eloquent to empty benches, as would be the lot of most lecturers on geology here. My friends who told you I was likely to visit America, have, I believe, been rather sanguine in the expectation of the effect which their advice had produced on me. I scarcely feel that I am entitled to visit you until I know more of Europe. I am just starting for a tour to the Alps.

Believe me most truly yours,

CHAS. LYELL.

July 7, 1835.
16 Hart Street, LONDON.

FROM SIR CHARLES LYELL.

16 HART STREET, BLOOMSBURY SQUARE,
May 20, 1836.

. . . . . You will be glad to hear that I have just received a letter of three sheets from Sir John Herschel, dated from the Cape of Good Hope, full of comments on my "Geology," which he had read through for the third time, and for the last time in the fourth edition.

He speaks of my variation-of-climate theory as "a great and acknowledged difficulty fairly surmounted." He talks of coming home, *via* Brazil, in a year and a half. You will see an article in the "Quarterly Review" on Dr. Buckland's Geological Bridgewater; but the work itself is not out yet, as he is working up the last chapters. I hope you

received my President's Addresses, one packet of which was sent by Mr. O. Rich, and another by an American gentleman. You have heard, of course, of the death of Professor Hoffman of Berlin. I have not heard whether we are to have his "Geology of Sicily" as a posthumous work. He was a man, I believe, of my own age, — thirty-eight, — which makes it an unexpected loss. In my fifth edition you will see a recast of the Elevation Crater controversy, in which I reply to Von Buch's article in "Poggendorf," and to De Beaumont's in the "Mémoires pour Servir," &c., and, I suppose, the "Annales des Mines." I had a good deal of personal intercourse with these two geologists last year at Paris and in Germany, and, after all the explanations I could get, I believe them to have started wrong in the first instance, and believe them to be now working themselves deeper and deeper into an untenable hypothesis. I wish, indeed, there was a bridge of steam across the Atlantic, that I might transport, if not myself, at least the first printed copy of my fifth edition to New Haven. As to American geology, I always feel that I have so much to do at my own door that I have no business to go there for these ten years, — for it would be like wishing to geologize the moon in our present infancy of the knowledge of the earth. Mr. Murchison's book will hardly be out this year, but I hope to see it very early next year; and such maps, sections, and fossil illustrations, never, I believe, adorned a book on our subject yet. You may well suppose that "Lyell's Elements" are not much accelerated by the recast of the Principles. I always recommend Bakewell. . . . . .

FROM SIR CHARLES LYELL.

New York, *April* 4, 1842.

. . . . . Now that I have travelled from Niagara to Georgia, and have met a great number of your countrymen on the Continent of Europe, and heard the manner in which they ascribe the taste they have for science to your

tuition, I may congratulate you, for I never heard as many of the rising generation in England refer as often to any one individual teacher as having given a direction to their taste. *Non omnia possumus omnes*, and if you cannot yourself explore the rocks from Maine to Florida, you may say that you have sent forth pupils who will do it for you. I have heard from Mantell at last, and was really relieved to find that the paralysis was due to a bad accident when he was thrown out of his carriage. We leave on the 12th, going by the Hudson to Professor Hitchcock's, and thence to Boston; there I leave my wife with Mrs. Ticknor, while I make some other excursions, in the course of which I may pay you a flying visit at New Haven. . . . . .

FROM SIR CHARLES LYELL.

LONDON, *August* 17, 1844.

MY DEAR SIR, — I was much obliged to you for writing to me, and for the lively account which you sent me of your very interesting tour to the West, where I should like much also to go, though I think it very doubtful whether circumstances or plans of geological tours in another direction, may not prevent me visiting the United States for some years. But my plans are unavoidably uncertain just now, and, in the mean time, I am glad to hear that you and your countrymen are moving on with your characteristic activity. I hope to be out at Christmas, but really cannot well estimate the amount of work which remains to be done. My collection of tertiary shells from Virginia and Maryland, South Carolina and Georgia, and my coral plants from Nova Scotia, which I have been studying with much pleasure, have occupied me longer than I anticipated. I regret that Hall has not yet got out his final report of which he has sent me a large part of the illustrations and, I believe, all the letter-press. We want Mathers also on New York. My wife begs me to thank your son particularly for his present to her of Dana's "Mineralogy," and joins me in con-

gratulations on the marriage which you announced.* Dr. Mantell bears up with great fortitude against his chronic complaint, and his spirits are surprisingly good. His new work on organic remains, will, I hope, be successful, as it is excellently fitted to popularize that branch of our science, and to furnish the elements of different departments of fossil zoölogy and botany. He has been obliged to give up part of his practice. I wish he had done so sooner. He and Mr. Lonsdale went on too long. We are rejoicing at the East India Company having consented to give Dr. Falconer five years' absence from professional duty (medical), in order that he may stay in London and describe the Himalayan mammalian and reptilian remains found by him and Captain C., and presented to the British Museum. You will see in the proceedings of the Royal Asiatic Society, what Falconer said in a lecture on the subject, and some remarks of mine on the same. I am much obliged to your son for so promptly publishing the abstracts I sent of my papers on American Geology. They come out so tardily now in our proceedings, that I am glad to have a voice in your Journal. Mr. Darwin has lately published an excellent little volume on volcanic islands, and he and I are impatient to see your son-in law's work on the coral islands of the Pacific. Pray, remember us to all your family, not omitting Mr. and Mrs. Hubbard, and believe me, my dear sir,

Most truly yours,
CHARLES LYELL.

FROM LADY LYELL.

December 10, 1849.

. . . . . WE saw Dr. Mantell the other day. Though he is often ill, his energy is quite wonderful, and he is better than some months ago. You will be sure to have heard from him his wonderful discoveries about the Belemnite and

* The marriage of Professor Dana to Miss Henrietta, daughter of Professor Silliman. — F.

the iguanodon's jaw. Mr. Cogswell is here at present, and will, I hope, pass the winter in London. We often see him. We have a very mild beginning of winter. I wonder if there are those sparkling twigs on the trees now to be seen at New Haven, which was my last impression of it. My husband is very busily engaged, as usual, and the different societies having met, add to his other engagements. Sir R. Murchison has returned from Italy, and reads a paper on some observations he made there, next Wednesday, at the Geological Society. I hear frequently from Mrs. Ticknor; she gives me Boston news. We have been rejoicing greatly, as I am sure you have, in General Taylor's election. It is for the United States to keep peace while the old world is convulsed; not but that I think good will come, and is coming, out of all these disturbances. Sir Charles unites with me in every kind wish to yourself and Mrs. Silliman.

FROM LADY LYELL.

11 Harley Street, LONDON.
April 28, 1854.

DEAR DR. SILLIMAN, — We returned last week from our winter's visit to Madeira and the Canary Islands, and I found your kind note, now of old date, — the 22d October, last year, — and also your kind present of your last Travels in Europe, for which, pray accept our best thanks. I have as yet done little more than glance at it, but I see a great deal to interest me in it when I take it up more leisurely. At present, you will believe we are fully employed, as there is always much to be done after an absence of several months. But this season we have peculiar excitement, as two days after our return last week, our brother and sister, Major and Mrs. Lyell, returned from India with their three little boys. She is my own sister, and we have, of course, much to talk about after three years' separation. They have, however, come here for good, and have taken a house in the Regent's Park. In the mean time, they are staying with my

father and mother, who are delighted to have their grandchildren. The week after next my younger sister, Leonora, is to be married to Dr. Pertz, the King's librarian at Berlin. We like the marriage in every respect but one, — that it takes her so far away. He is expected here in a day or two, and will stay in our house till the wedding takes place. We were sorry not to see Mr. Gilman who brought your letter, in consequence of our absence, but he was several times at my father's. He had brought a letter of introduction to Dr. Pertz at Berlin, and as he (Dr. P.) happened to be in London, Mr. Gilman was introduced to him here. He brought me the beautiful piece of amethyst quartz from Dr. Gibbon of North Carolina. Might I ask you, dear sir, kindly to give my best thanks for this, and explain why I have been so slow in sending them. We have had a very interesting tour, and enjoyed a charming climate all winter. Sir Charles has profited much by the geology, and brought here great materials for papers and memoirs. He is extremely well too.

I must conclude with our best compliments to Mrs. Silliman, and kind regards to all your family in its various branches.

Ever, very sincerely yours,

MARY E. LYELL.

FROM SIR R. I. MURCHISON.

PARIS, *April* 4, 1841.

MY DEAR PROFESSOR, — This is my first stage on my road to St. Petersburg and the Ural Mountains, and I have come by this circuitous route in order to secure the company of my friend and coadjutor, Mr. E. W. Verneuil. We hope to reach St. Petersburg by the first of May, and to be in the Ural Mountains, or on their flanks, in the first week of June. I fear that our friend, Dr. Mantell, misled you in writing to say that I was about to visit the United States. This arose from Dr. Buckland having talked of

such a project after our geological anniversary dinner, at which I took the chair as President. A little memoir (an abstract of a very long memoir which I read recently before the Geological Society) will explain to you (and I have desired copies to be sent to you) to what a great extent I am embarked in Russian geology, and how, being "in medias res," I am naturally led to try to complete a correct outline sketch of a geological map of Russia in Europe. To your magnificent region, I look with intense interest, and I live in the hope of being able to explore its palæozoic rocks. Already, however, your able countrymen are preparing all the elements for the complete classification of these olden deposits of America.

I have for some time been much gratified to observe the steps which Conrad, Hall, &c., have been laying; and very recently, I was delighted to receive from the last-mentioned geologist, a suit of specimens which leave no doubt of the descending succession of the old red sandstone or Devonian rocks into true Silurian types. . . . . From what I see, I should be disposed to think that North America may offer the fullest and most perfect sequence of palæozoic strata in the world. It is right, therefore, that I should see your grand development last. "Vedi Napoli e poi morir."

FROM SIR R. I. MURCHISON.

BELGRAVE SQUARE, *May* 27, 1850.

MY DEAR SIR, — Our mutual friend, Dr. Mantell, has reminded me that I have been guilty of what I very much regret. I have omitted, it appears, to thank you for the admirable work of your son-in-law, Mr. Dana, on corals; a work concerning the excellence of which no naturalist entertains a doubt, and of which our friend Lonsdale, who is our best judge, has the very highest opinion. I am really quite shocked that I should thus appear to be unmindful of what I really consider a great boon, and which I have endeavored to utilize among my naturalist friends as far as

was practicable; but you will forgive me when I tell you that I never received the *plates*, without which, the descriptions are, to a great extent, useless. I can only account for my apparent neglect of your kindness by my having delayed to write in expectation of the arrival of the plates. But whether they shall ever reach me or not, pray be assured that I am deeply sensible of your friendship, and that I duly estimate the intrinsic value of the present. If you could have peeped into the anniversary dinner-room of the Royal Geological Society yesterday, where I presided with your representative, Mr. Abbott Lawrence, on my right hand, you would not think that I had a lukewarm feeling to the men of science in the United States. In fact, it was owing to my suggestion and motion in the Council, that the only gold medal we have adjudicated this year (the Victoria) was unanimously voted to Colonel Fremont, for his most adventurous and most successful explorations of the Rocky Mountains, the great saliferous region, and the Sierra Nevada of California. I have quite an admiration of this true geographer who, under so many privations, has opened up to us such an enormous mass of land, and has laid down its latitude so correctly. . . . . .

FROM PROFESSOR R. OWEN.

Royal College of Surgeons, LONDON,
March 16, 1843.

MY DEAR SIR, — I beg to acknowledge the favor of your esteemed letter of the 27th February, and am unwilling to delay my answer, although I am not able to answer on all the points to which it relates. I have not yet, for example, seen the entire collection of footprints in the possession of our common friend, Mr. Mantell; but on the few which he has obligingly submitted to me, (two very clear ones, last Saturday night, at the *soirée* of the P. R. S.,) I may venture, after much mature consideration, to speak. You may be aware that M. de Blainville contends that the ground —

namely, a single bone or articular facet of a bone — on which Cuvier deemed it possible to reconstruct the entire animal, is inadequate to that end. In this opinion I do not coincide. I have had too frequent evidence of the potency of the law of correlation of structures in an animal organism to doubt the strength of Cuvier's proposition. But if a single bone has been deemed insufficient to give the entire animal, with more reason may we doubt the efficacy of a footprint. We must bear in mind the conflicting opinions to which the Chirotherian impressions have given rise; next, in regard to the Ornithicnites, it is important to remember that there were reptiles at the age of the New Red Sandstone, the Rhynchosaurus, *e. g.*, (see "Transactions of the Cambridge Philosophical Society," Vol. VII., Part iii., p. 355,) which presented a singularly close approximation to birds in the form and structure of their edentulous skull; and might not a corresponding modification of the feet complete the resemblance of these ancient reptiles to the fabled cockatrice? A biped reptile would not be more anomalous than a jerboa or kangaroo. In the foregoing remarks I wish to be understood as merely indicating the grounds which justify caution in assuming the existence of a highly organized, warm-blooded, quick-breathing, perhaps volant, feathered biped, from footprints merely. I have, however, recently acquired very important additional evidence of the former existence, in the Island of New Zealand, of a gigantic bird, having the same low grade of organization as regards the respiratory system which I have demonstrated in the *Apteryx* of the same island ("Zoölogical Translations," Vol. I.). It is to this circumstance, perhaps, that Dr. Daubeny alludes in his letter to you. My evidence is not, however, footprints, but the bones themselves. If you will refer to the "Transactions of the Zoölogical Society," Vol. III. Part i. p. 29, you will see the first indication of the gigantic struthious bird of New Zealand, which vindicates Cuvier's principle, as showing what may

be made out of a single fragment of bone. Three years after that fragment was interpreted, a box containing femora, tibia, a metatarsal bone, and portions of pelvis, vertebræ, &c., was transmitted to Dr. Buckland from New Zealand, who generously placed them at my disposal. They were described at the meeting of the Zoölogical Society, January 24, 1843, and established the fact that at no very remote period, — say a couple of centuries ago, — there existed in New Zealand a tri-dactyle struthious bird, one third larger than the African ostrich, resembling the apteryx in the proportions of the tibia to the metatarsus, and in the absence of air in the femur, and, therefore, most probably in the rudimental state of the wings. Now the metatarsal bone of this bird, which I have called *Dinornis Nova Zelandia*, is fully large enough to have sustained three toes equivalent to produce impressions of the size of those of the Ornithicnites *giganteus* of Professor Hitchcock.

This I had the pleasure to demonstrate to Mr. Boot of Boston, during his late visit to London. It seems most reasonable, therefore, to conclude that the Ornithicnites are the impressions of the feet of birds which had the same low grade of organization as the *Apteryx* and the Dinornis of New Zealand, and these latter may be regarded as the last remnants of an apterous race of birds which seems to have flourished at the epoch of the New Red Sandstones of Connecticut and Massachusetts.

Believe me, very faithfully yours,

RICHARD OWEN.

FROM PROFESSOR R. OWEN.

LONDON, Royal College of Surgeons,
December 6, 1846.

MY DEAR PROFESSOR SILLIMAN, — I was much gratified by receiving your friendly note of November 20, and the good wishes of your accomplished son, and your friend, Mr. Dana. I regret to find that you have never received

Part II. of the "Memoir on Dinornis," as your name appears amongst the first in my list of friends to whom I had, or meant to have, sent it. I enclose it herewith to the care of George P. Putnam. At the same time you will receive a copy of my contributions to the history of our fossil mammals, (additional or supplemental to my 8vo. history,) and also a copy of my work on the Archetype and Homologies of the vertebrate skeleton. You may remember the condition in which this philosophical department of anatomy was left by the great Cuvier and Geoffroy, and the discussions which unhappily tended to sever those estimable men in the latter period of their lives. The result was the formation of two schools or parties in the French world of anatomy, and subsequently the facts and arguments bearing upon these transcendental questions have been viewed in Paris through the prism of such party feeling.

The chief and most cherished labor and reflections of many past years have been devoted by me to the acquisition of such truth as might lie at the bottom of the well into which this Philosophy of Anatomy seemed to have sunk after the departure of the great luminaries of the Jardin des Plantes. With what success I have drawn from the deep and obscure source, I leave to the impartial students of my little book. My chief hope of a fair reception and appreciation of the philosophy rests with or on the free and clear judgment of your countrymen. . . . . .

FROM PROFESSOR DAUBENY.

Botanic Garden, OXFORD,
February 3, 1843.

DEAR PROFESSOR SILLIMAN, — I hope I have not made you an unacceptable return for your many kind attentions in forwarding to me a copy of your interesting Journal, by addressing to you, through the Secretary of the Royal Society, my little Journal in the United States, of which I have printed one hundred copies for private circulation

amongst friends. I cannot expect that any friends on your side of the Atlantic will admit the justice of all I have said, but I hope they will allow that I have not viewed them with an eye of hostility, or even of prejudice. I must, indeed, have been very unfortunate in the expression of my sentiments, if my remarks have not conveyed to others a feeling of great good-will, on my part, more especially as respects the people of New England. I should, however, be very glad to hear whether you think that in other parts of the Union I should be considered to make an acceptable present in sending copies of such a production. By the same conveyance you will probably also receive a copy of the last agricultural lecture I have published. I believe I have sent you all the preceding ones; such at least was my intention, but, if not, you will find them in the Journal of the Royal English Agricultural Society. The subject of agriculture is now exciting much attention in England, and the new views of Liebig are opening a new field of research both in vegetable and in animal physiology.

I travelled with that distinguished man during a considerable part of last summer in different parts of England and Scotland, and was much pleased with him. His principles are carried out, in Dr. Jones's little work on "Gravel and Grit," with much ingenuity, and his translator, Dr. Playfair, is engaged in many experiments on the feeding and fattening of cattle according to his principles. . . . . .

FROM PROFESSOR DAUBENY.

January 17, 1848.

. . . . . I TRUST you will regard this present as a proof that I retain a lively recollection of the agreeable time I spent amongst my brethren in the New World, and more especially of the kindness and attention I experienced at New Haven, from whence you will be able, I hope, to give me good tidings of yourself and family. Your Mexican war is, I believe, not viewed with much favor in the New Eng-

land States, but the brightest point of view in which to regard it has reference to the facilities its results may hereafter afford to your energetic countrymen for exploring the volcanoes of that interesting country. If I were younger I should only wait for your obtaining quiet possession and establishing order before I undertook to visit them.

FROM PROFESSOR DAUBENY.

February 26, 1848.

. . . . . You will hear of the great discovery of phosphate of lime in the green land of Surrey. That coprolites containing it existed in that formation, had been pointed out by Dr. Buckland and Dr. Fitton; but that the sponges, coralines, &c., were fossilized by that material instead of by the carbonate is, I believe, new, although it might have been conjectured that the mineral ingredients of the fish which produced the coprolites would not have altogether disappeared, and especially as the soft parts contained phosphates as well as the bones. We are thunderstruck with the news from Paris. If the French are to have a republic, God grant that it may be as consistent with public order as it has proved in the United States. But this I greatly doubt. Pray remember me to your son, and to Mr. Dana, and believe me, very dear sir,

Very truly yours,

CHARLES DAUBENY.

FROM PROFESSOR DAUBENY.

January 17, 1852.

. . . . . I REGRETTED much that your prolonged stay on the Continent should have not only prevented me seeing you there, but also your repeating your visit to Oxford, where I had hoped to have enjoyed a little more of your society before your return to America. It was, however, a source of much gratification for me to renew, even for so short a time, at Oxford, the acquaintance I had had with

you fourteen years ago at New Haven, and to be introduced to the other members of your family who accompanied you.

Events have tended, I think, to draw together more closely than ever the bonds of union between our transatlantic brethren and ourselves. A little time ago, it might have been doubted, whether, notwithstanding our common origin, manners, and language, the aristocratical element which holds a place in our constitution did not interpose a broader line of demarcation between us than existed in the case of those continental nations amongst whom democracy seemed then to have established itself.

The changes, however, that have just occurred in France, induce us to place but little dependence on the continuance of liberal institutions anywhere on the European Continent, and make one fear that freedom will shortly be able to raise its head nowhere except amongst the Anglo-Saxon race. Indeed, the false security in which our nation indulges in the face of an army of 500,000 men, within sight of our shores, under an unscrupulous leader, makes one feel some diffidence as to what may be our own fate hereafter, whilst as to Belgium and Piedmont the prospect is even darker. . . . . .

FROM PROFESSOR DAUBENY.

May 3, 1852.

. . . . THE Oxford Commissioners have just delivered in their report, and it is ordered to be printed, so that I doubt not but that it will shortly be easy to obtain. It contains a large and valuable body of evidence, but as it was undertaken under the auspices of the late ministry, it is less probable that the *present* will found any substantial measure of reform upon it. In the meantime, however, some progress is making here in the promotion of scientific studies. I am now in hopes that the University will vote me a sum of money, not less than £3000, for the reception and

maintenance of the Fielding Herbarium, one of the finest in Great Britain, now offered to the Botanic Garden. If so, foreign botanists may find at Oxford greater facilities, even, than at the Metropolis, for studying plants, considering the easy access to our collections. I also hope that we shall soon see a Museum more worthy of the University than the one you visited.

With respect to your question as to the number of our members, I may state that all who have ever taken a degree and continue their names on the books of the University, (for which they pay a small annual fee,) are included in the number 5900 (last year 6080). If masters of arts, they have the privilege of voting at University elections, including that for the members of Parliament who represent the corporate body. The numbers actively studying are, of course, much smaller. I should conceive that 1500 would include all the students, though not probably the resident tutors and fellows.

The number of matriculations in 1851 was 359, which, multiplied by four, would give 1436 as the number of undergraduates. The members of Convocation, viz., M. A., and in higher degrees, were, in 1851, 3352; leaving for B. A. 1292, so that the total would be 6080.

No residence is required of M. A., and only three weeks of B. A. Undergraduates also are allowed three terms' absence during the four years, before taking their degree of B. A.

We lost my old and valued friend and colleague, Dr. Kidd, in September, by a sudden attack of illness. In other respects the University staff of Professors is much as when you visited us. . . . . .

FROM PROFESSOR DAUBENY.

[Date wanting.]

. . . . From the extracts I have seen of it I have no doubt that I shall derive profit and pleasure from the fruits of your second ramble into the Old World.

We are on the eve of a great contest, the result of which will determine whether despotism or constitutional government is to prevail in Europe. Should Russia be able to defy all the powers now arrayed against her, I do not see what is to stop her in her advance to universal empire. I mean, of course, with the Old World. You at least may look on, if not as unconcerned, at least not personally interested, spectators in the great struggle. We are also on the eve of great changes in our academical system, which, I trust, will work well, the government having taken upon themselves the task of reforming us, so that you see we are not altogether occupied with foreign politics.

Murchison's great work — the Silurian system — is the principal geological novelty, unless you regard as geological, Whewell's clever essay, the "Plurality of Worlds." . . . .

FROM PROFESSOR DAUBENY.

February 15, 1858.

MY DEAR SIR, — I am sorry to say that one of the pamphlets you asked about is out of print, but I have sent two copies of the other, namely — "Can Physical Science obtain a Home in an English University," together with a little *jeu d'esprit* of mine, entitled, "A Dream of the New Museum," intended to point out the inconsistency of a great University, which is as rich as ours is in institutions connected with classical literature, grudging what is wanted to place the physical sciences upon a respectable footing amongst us. This deficiency will, I hope, be in part supplied by the new Museum now erecting, and other arrangements are talked of which will render Oxford less exclusively devoted to members of the clerical profession and to the aristocracy than heretofore. I have added a little essay of mine on the theory of Cholera, in which, as I have freely owned, I am anticipated by your countryman, Dr. Mitchell of Philadelphia. Dr. Livingstone's statements with respect to the Tzetze fly in his interesting travels, seem to me to

present some analogy in the *gradual* but incurable disturbance in the system, produced by a poison which, unlike other well-known insect stings, produces no irritation at the time. I am much obliged to you for promising to take notice of my "Lectures on Roman Husbandry"; it will be the means of rendering them known in the United States, as they will be shortly in Germany, as a Leipsic Professor is about to translate them.

Our Indian troubles appear drawing to a conclusion, but the perfidy and cruelty of the natives have left behind them a feeling of estrangement from the whole Hindoo race, which must be got over, or the country will not be worth our holding. In this point of view, Lord Canning's measures are much wiser, as well as more humane, than those of some of his compatriots at Calcutta.

I may call your attention to a little notice of mine in the "Proceedings of the Geological Society" for last month, suggesting a cause for the evolution of ammonia from volcanoes. As it is very short, it may, perhaps, be thought worth inserting in your Journal.

I am much obliged by your long and interesting letter, and shall at all times be glad to hear of you and your family, either in this way or by those who bring me your card.

FROM SIR J. F. W. HERSCHEL.

SIR,—I have received and read with much interest the biography you were so good as to send me of the late Mr. Mason.* It is indeed a very affecting, and at the same time a very pleasing, record; and a youth of such talent and promise would not have failed, had he lived, to have distinguished himself and done honor to his country, not only by his discoveries but by his virtues. I already possess an account of a fourteen-feet reflector constructed by him, and of his observations (very interesting ones) made with it on

* Ebenezer Porter Mason, a young American Astronomer of high promise who died December 26th, 1840. —F.

some nebulæ, which prove him to have been a careful and accurate observer, and make his loss much to be regretted on that score also, as well as on that of general power.

The work was addressed to me by his "*representatives*," but as no names were mentioned or addresses, I knew not how to acknowledge it. As you are in communication with the parties, I will request you to convey to them my best thanks for their interesting paper, and I beg to remain, sir,

With much regard,

Your obliged and obedient servant,

J. F. W. HERSCHEL.

COLLINGWOOD, *Dec.* 27, 1842.

FROM PROFESSOR HAIDINGER.

VIENNA, *April* 2, 1860.

. . . . I SHALL be most happy to welcome our most excellent friend, Professor Dana, restored by his stay in Italy. I am much afraid our western neighbor will not let Europe approach to anything like peace; he is working about curing social evils by political changes, which only tend to aggravate the difficulties of the former. . . . . In a late communication of mine to our academy relative to another account of the meteoric iron, I began calling attention to the noise caused by meteorites, and usually called explosions, as not belonging to anything like a real explosion like that of gunpowder, but simply to the repletion of an empty space, following the meteorite, and kept in that state by the rotatory motion of the latter, till its process is checked by the resistance of the atmosphere. I should very much like to call your attention to this subject. I have also to give an account of our Bohemian meteor of November 28th.

Ever most truly yours,

W. HAIDINGER.

FROM PROFESSOR CONYBEARE.

August, 1836.

My dear Sir, — I have to express my thanks for several kind presents in the literary way, which I have received from you, in which I have not only been gratified by their general interest, but equally by the expression of those sentiments which every large and liberal mind must wish to see prevail between countries identified in lineage, language, and literature, and in all the great ends, if not in all the great means, of our social institutions, — of the elder, of which it must ever be one of the proudest boasts that she is the mother of the younger, — an offspring destined to spread her speech and civilization over a vast continent, and to give them an extent unrivalled by any other family of man.

An intercourse of the scientific and literary minds of the two countries, will, I am persuaded, be among the most efficient means of cementing those feelings of friendship which it is so very desirable to encourage. I have, therefore, great satisfaction in forwarding to you the first numbers of a new scientific Journal, which my friends at Bristol have just established. Bristol has a peculiar chain of connection with America; it was long the principal port where an intercourse between the two countries was carried on, and it is indeed our boast that Sebastian Cabot, in a vessel fitted out by us, was the first discoverer of any part of the Continent of North America; so that we hope you will look with greater interest at our efforts to promote the cause of science, in which we trust the present Journal will very efficiently coöperate with our excellent Institution and very valuable library previously established. In America, I believe you have similar advantages in most of your large towns; but in England the principle of centralization very much more refers everything to our vast metropolis. Yet the progress of most of our respectable provincial towns

has, of late years, been very satisfactory, and Bristol has in this noble race fully kept pace with her competitor.

FROM PROFESSOR J. F. W. JOHNSTON.

Moscow, *August* 24, 1842.

. . . . . BEFORE entering Russia, I have been paying a visit to my old friend Berzelius, at Stockholm, and since that time have run over some one thousand miles of this infantile region of country. What a contrast between the internal progress of your really young country and of this gigantic and almost unwieldy empire, every wheel of which is moved by one main spring, the tension of which regulates the progress of every hand. Here are vast plains, extensive forests, great rivers, all rich capabilities undeveloped by the great mass of the nobles, — even as yet unperceived. But everything here partakes more or less of the eastern origin of the people. Gold and silver, scarlet, blue and green, fine dress, fine armor, splendid uniforms, military display, — everything that at once attracts and pleases the eye, — these are the objects sought after by the people from Petersburg to Ispahan. From the whole Empire itself to the gaudy ornamental goods manufactured at Moscow, everything is external and for effect; the goods will not bear inspection; they are rude and unfinished when you look beneath the gildings; the Empire is a mere great outline, which long time alone can fill up. It is a vast canvas on which the painter has yet only put in and partially finished a few prominent figures, — Petersburg, Moscow, and scarcely another, while here and there faint sketches only of many others appear. And yet there is great progress everywhere observable, but that progress is retarded as that of the traveller is, at every step, by the necessity of attending to a thousand forms, and by the military organization of everything. . . . . .

FROM PROFESSOR WILLIAM B. ROGERS.

UNIVERSITY OF VIRGINIA,
May 17, 1839.

. . . . . You will remark a similarity in my mode of grasping the formations in our Appalachian and Alleghany regions with that adopted by my brother in Pennsylvania. In fact, we work in concert, and coinciding in our geological views have adopted the same methods. It gives me pleasure to find, by information from Europe, that our cautious, though extremely laborious mode of research meets the approbation of the sound and judicious geologists abroad; and I feel perfectly assured that when the entire body of our results, with the multitude of illustrative sections, and other delineations shall be made public, there will be but one opinion as to the philosophy of the course we are pursuing. The phenomena of structure, — the illustration of the directions and comparative energies of geological forces will, I am sure, be regarded as important additions to geological dynamics. In fact, I am bold enough to hope that many important general views, not without novelty, will be presented, which from the wide scale of our formations and the symmetrical operation of the great disturbing forces to which they have been exposed, we have been enabled to elucidate more clearly than could be done anywhere in Europe. . . . .

CHAPTER XXIV.

CORRESPONDENCE WITH DR. MANTELL.

Origin of the Correspondence. — Dr. Mantell on the Vicissitudes of Fortune among English Families; on Tariffs. — Professor Silliman on Nullification and Slavery; on Mrs. Trollope's Book on the United States; on Captain Hamilton's Book on the United States. — Dr. Mantell on the Duke of Wellington; on Agassiz's Visit to him; on Mr. Lyell's History. — Professor Silliman on the Means of Health; on the Bird-Tracks of the Connecticut River Valley; on the Visit of Dickens, and that of Lyell, to the United States. — Dr. Mantell on Mr. Bakewell, his Infirmities, his Death. — Professor Silliman on Dr. Mantell's Disease. — Dr. Mantell on the *Medals of Creation;* on Sir R. Peel; on Dr. Lardner. — Professor Silliman on Equivocal Generation and the Nebular Theory; on Lyell's Visit. — Dr. Mantell on the Potato-rot and the Condition of the English Poor; on his *Geology of the Isle of Wight.* — Professor Silliman on Dr. Mantell's Sufferings; on Mr. Lyell's Reference to Dr. Mantell (in his *Geology*, Second Edition); on the Mexican War and European War. — Dr. Mantell on the Dinner of the Geological Society. — Professor Silliman on California. — Dr. Mantell on Faraday; on the Death of Sir R. Peel; on his Annuity from the Queen. — Dr. J. C. Warren on the Death of Dr. Mantell.

A MOST intimate and confidential intercourse grew up between Professor Silliman and the celebrated geologist, Dr. Mantell, although they had never seen one another until the second visit of the former to Europe, in 1851. Dr. Mantell was an ardent and most diligent investigator, and is entitled to the honor of making very important discoveries. Naturally sensitive, he was rendered the more so by the bodily infirmities of a most painful character, with which he was compelled to struggle. The amount of work which he accomplished, under the burden

of disease, is wonderful. There was much in his situation to harass and sadden his feelings. His American friend, to whom he confided all his grievances and anxieties, was never weary of the effort to soothe and sustain him. The letters of Professor Silliman were for many years one of his chief sources of happiness. The present chapter is devoted to selections from this correspondence,—preceded, however, by Professor Silliman's own account of the origin of the acquaintance.

During my first visit to England and Scotland in 1805–6, Dr. Mantell's star had not yet risen above the horizon. Being ten or twelve years younger than myself, he was then of course unknown to me, and was quite a youth. More than twenty years after my return home, I began to hear his name mentioned in connection with interesting discoveries which he was reported to have made in Paleontology, in the southeast of England, where he resided, in the ancient town of Lewes, in Sussex. A few years later still, the fame of his published works reached me, and I ventured to address to him a letter, in the autumn of 1830, begging that he would send me his works on the geology of the region in which he lived, and promising him a return in the American "Journal of Science and Arts," and in any other work which I had published. I of course stated my professional connection with Yale College, also my personal acquaintance with England, and I gave references to individuals to whom I was known in that country. These precautions, as appeared by the result, were unnecessary, for Dr. Mantell had already anticipated my request, and had, unsolicited, done the very thing which I desired. In those days there were no ocean steamers, and the average of passages across the Atlantic, both ways, was thirty-six days, according to the experience of more than thirty

years of Captain Sebor, as stated to me by himself. (The first English steamer, — the Sirius, — a small experimental ship, arrived in New York in April, 1838.) I had no reason to expect an early reply from Dr. Mantell; but my letter to him had been gone only a few days, when the desired books arrived.

The fact that each of us had taken the initiative step, — each without knowing what the other was doing, — this happy movement on the part of men of temperament not dissimilar and not cold, brought us together in genial sympathy. The offices of kindness and useful service which began from the first overture, and never ceased until death closed our intercourse, soon ripened into a warm friendship and cordial confidence and esteem; and, considering that we were already, and myself especially, in the evening twilight of life, our correspondence was not only confiding, it was affectionate. I was fifty-two, and Dr. Mantell forty-one, when the correspondence began. His first letter to me is dated March 29, 1831, and the last, October 11, 1852; and he died November 10, 1852, — just one month intervening. Dr. Mantell's letters were not only most friendly and confiding, they were full of information, and were often accompanied by valuable specimens, which gradually accumulated to form a large and valuable collection. In his letters he gave me from time to time the most recent and most important scientific intelligence, which was usually inserted in the "Journal of Science," whose pages were occasionally enriched by original communications from his own pen.

There are one hundred and twenty-six letters of Dr. Mantell, in regular sequence of dates, — from March 29, 1831, to October 11, 1852, a period of twenty years and a half, making about six letters a year.* My letters were,

* Besides these, a considerable number of letters from Dr. Mantell have been found among Mr. Silliman's papers, which had escaped his eye when he made the collection. — F.

of course, to say the least, equally numerous, and therefore there must have passed between us two hundred and fifty letters in all; they were usually full, and frequently long.

FROM DR. MANTELL.

CASTLE PLACE, LEWES, SUSSEX, ENGLAND,
February 10, 1833.

MY DEAR SIR, — Your kind present reached me in safety in January, but the bustle of this season of the year has left me not one moment's leisure till now, and I eagerly embrace a few minutes' quiet to have the pleasure of a *tête-à-tête* with you. First, let me again express how deeply sensible we are of your kind and liberal exertions to afford us gratification, and to assure you of the high pleasure your communications, and those of your charming family, give to me and mine. Although I fear you and I shall never meet in this world, yet it is consolatory to reflect that there is a possibility our children may, and that our scientific intercourse — itself a sufficient reward — may yet lay the foundation of a friendship between those who are dear to us, the benefits arising from which may hereafter be of more value than we can utter, calculate, or imagine. The Mastodon's tooth was to me of the highest interest; and so much do I value any relic of this kind, that I candidly state there is nothing so much coveted by me as teeth or bones of any of your extinct mammalia; and if you could procure for me, by exchange or purchase, any bones or teeth of the Mastodon, without inconvenience to yourself, I would gladly repay you, and should feel greatly obliged by your kindness: of course I should not like to expend any large sum without being previously made acquainted with the nature of the specimens. The tooth you have so generously given me is quite a treasure. . . . . And now, my dear sir, I have arrived at your own work, in which your friendship and kind feeling have led you to give so excellent, but too flattering, notice of me

and my labors. I cannot express what I feel on this subject; but be assured that neither Mrs. Mantell, nor myself, nor my family, can ever forget your disinterested kindness! The notice has been copied in part into many of our journals, and it came most opportunely, at the very time when my memoir (which I read to the Geological Society on the 5th of December) had excited great interest in the scientific world, and found its way into many of the leading daily papers. . . . . I feel most deeply sensible of your kind, your generous observation on the possibility of my family, like thousands of others, being compelled to seek in your rising country for that repose and comfort which, in my artificial and highly-excited community, but few, if any, can find; and I assure you, my dear friend, that, deeply as I venerate the home of my ancestors, and attached as I am to the very walls which surround their ashes, yet, if I were ten years younger, I would not, for the sake of my family, have hesitated long since to launch my young folks in America, where they would have been free from that feverish state of anxiety and excitement, which awaits them here. When I reflect on the many hundreds of families whom, even in my comparatively short life, I have seen reduced from affluence to poverty, I shudder with horror lest such a fate may be mine, in spite of all my exertions and all the precautions which providence can suggest; and the same feeling pervades all classes of society. I know not one, even of our first families, that does not find itself involved in difficulties. I read with great feeling your eloquent address on the causes of national anxiety, alike honorable to your head and heart; it has afforded much pleasure to some benevolent friends to whom I have lent it. Stewart's "America," which is just published, has a great run. Mrs. Trollope's is sinking into merited oblivion and contempt. I have been watching with intense anxiety the announcements from Carolina; and most fervently do I hope that the difference existing

between that State and your Government may speedily subside. Our Tories (and our Whigs too) are quite delighted at the possibility of a civil war in a republic, to which Englishmen look as an example of free government and liberal institutions; and nothing would more retard the progress of freedom here and in Europe than a separation between your States. I hope and trust all is now quiet. Our enlightened men condemn the Tariff as most injudicious, and leading to all the abominations of excisement and places in a country which for centuries might go on without them; yet the principles of confederation laid down by your President are considered unanswerable. Our friend, Mr. Bakewell, whom I saw in London, is very well, and as actively alive to his favorite science as ever; he has been, as ever, most kind and attentive to my interests; and, indeed, to him entirely I owe the publication of my book, — for a publisher, to whom I intrusted it, kept my MS. a month, and then declined it, — the delay was to prevent its appearance before a geological work of his own. Mr. B. came to London and heard my lectures. You will have a great treat in Mr. Lyell's third volume, and in Mr. Hawkins's beautiful plates.

FROM DR. MANTELL.

June 18, 1833.

. . . . . I WRITE on the anniversary of the battle of Waterloo. We are here in great consternation lest the Duke should again get into power, for the Tories are making a tremendous struggle; if they do your country will be the only asylum for us; the middling classes here have suffered greatly, and we had reason to hope the worst was over, for things began to wear a brighter aspect; but if that moral upas, the Duke, should again rule the ascendant, there will be no hope; despotism, — military despotism, or a revolution, — will be the result.

TO DR. MANTELL.

YALE COLLEGE, NEW HAVEN, CONNECTICUT,
July 18, 1833.

MY DEAR SIR, — . . . . . You manifest very kind and liberal feelings towards our institutions and the trial to which they have been subjected by the recent opposition of South Carolina. You have, ere this, seen that it has subsided with the mitigation of the Tariff, — the acceptance of that mitigation by the Senators and Representatives of South Carolina, at Washington, and with the energetic course which the government were prepared to pursue in case of actual resistance. I trust the danger is gone by; — certainly it has for the present, for the country is almost unanimous in support of the government. The opposition at the South was fomented by a few disappointed, ambitious men, some of them men of great talent and influence. They are now disposed to fasten upon the subject of slavery as a means of excitement. Some of the features of that most anxious subject are sketched in the little tract which I sent you, and which, with your usual kindness, you appreciate beyond its merits. It may have served, however, to give some hints as to the danger which impends over this country, from its domestic slavery. It is probable that slavery will in future be the principal source of disunion, and it is impossible to tell what may be the result. As to all other subjects, my impression is, that our popular institutions give every promise of permanency. The most important reason is that the people have the power, and have already had it; and they are too generally well educated to trifle with the security of their own persons and property; they elect those men who, as they suppose, sympathize with them, and there is generally a willing obedience to law. It is the habit of the people to obey law, and to reverence it, and respect magistrates. It is impossible to say how long it may be before the means of subsistence shall be obtained with dif-

ficulty, and labor will not command bread. This period appears however to be far off in this country, and should any of your children or friends choose it for their home, I think they have fair prospects of peace, competency, and security. Mr. Stewart's view of this country is generally candid, manly, and correct; his errors are not often important, and are always, I believe, unintended. Mrs. Trollope hit us in many points, where we do indeed deserve to be lashed, and I think that she has done us some good; but she was after all much more of a satire upon the respectable gentlewomanhood of Britain, than her book was upon this country. I mean that she would be still further from being a fair representative of the highly estimable and most respectable character of English women. I have often thought that there might be serious advantage to English families of moderate but still comfortable means by removing to this country in which subsistence (fashion and folly aside) is not dear, and the comforts of life are obtained at a cheap rate, and even elegant and refined enjoyments without a vast expense.

FROM DR. MANTELL.

LEWES, ENGLAND, *October* 3, 1833.

LET me then thank you for your most valued communication, which I shall place among my most precious treasures, with the letters of my distinguished friends, now, alas, no more! — with those of Davy, Cuvier, Clark, Parkinson, Wollaston, Canning, &c. Long ere this, my book must have reached you, for it was sent on the 24th of May, (and as I am rather romantic,) I have often indulged in the supposition that you were looking it over, and amused myself with a guess at your opinion on my new creature, and on the other osteological wonders there first described. I candidly told you the volume was full of faults, and you will have found it so. The only parts I am satisfied with are the introductory remarks, the chapter on the Hylæosauros,

and the last, on the results of the geological researches in the southeast of England.

TO DR. MANTELL.

YALE COLLEGE, NEW HAVEN,
October 12, 1833.

. . . . . WE are now entirely quiet as to our political dissensions, and nullification is in lethargy and suspended animation, if not the last struggles of life. The question of slavery is, however, becoming very deeply interesting, and is a very exciting subject. I think we cannot shut our eyes any longer upon its impending dangers; although views which I expressed in the little tract which I sent you, appear to be in a way to be realized, provided these dangers are not seasonably averted. I am happy to observe that you have escaped the Duke's iron sway, and I trust that things are getting better with you in England. I presume you have seen Captain Hamilton's late book on this country; it would seem that America is a very favorite theme in England, for I presume that so many books would not sell if they were received with indifference, and they would probably not be written if they did not sell. I have not read Hamilton's book, except in spots. He, like Captain Basil Hall, sometimes forgot what was due to good manners. I was a few days since at a splendid villa on the Hudson, — Dr. Hosack's, at Hyde Park. It is all in English style, and I should have thought I was at an English nobleman's seat. There is a splendid library of thousands of volumes, of the first works in literature and science, and a very polished and hospitable family, where there is a constant succession of the best society. Here Captain Hamilton used to allow himself to come to dinner with the ladies in a very short roundabout jacket, and he walked the streets of New York in the same style with a lady on his arm and a cigar in his mouth. But enough of this.

FROM DR. MANTELL.

BRIGHTON, *January* 18, 1834.

THE heading of this letter will, I feel assured, be at once an apology for my not having earlier acknowledged your very kind, most acceptable, and delightful letter, and still more the safe arrival of the invaluable present which it announced the departure of. This to me most precious, even of all your gifts, I received in London from the hands of Mr. Rich, and it arrived here in safety, three weeks ago, in time to occupy a conspicuous place in my drawing-room, among the portraits of my family and friends; it is placed immediately over my friend Lyell's picture.. It really does great credit to your young artist, for the execution is very good, and pray tell him that it is very much admired; and in this bustling place, it is seen by no small number of persons. Let me beg, my dear sir, that you will accept not only of my thanks, but also of those of Mrs. Mantell, and all my family, for this delightful addition to our circle. Rogers has beautifully reminded us that there is an eternity even in this world, — the power of living in the memories of those who come after us, and by whom our names and our characters will be respected. I would add, there is even given to us in this world our degree of omnipresence, by which we enjoy the privilege of communing with those kindred minds who are forever separated from us, but in whose recollections we are present, and in a manner more pleasing and delightful than perhaps even by personal intercourse. The Cambridge meeting passed off admirably, as you will ere this have seen by the book I send you containing the autographs and account of the proceedings, but I did not go to Stratford, but accompanied the Marquis of Northampton to his seat, Castle Ashley, (Northamptonshire,) where Dr. and Mrs. Buckland joined us, and Mr. and Mrs. Murchison; so that we had a most charming party; and I very much enjoyed myself. I accompanied

Dr. B. to Stowe, the celebrated seat of the Duke of Buckingham, (of whom you will have heard as the purchaser of the *first* plesiosaurus,) and thence to Oxford; the weather was most propitious; we are now doing penance for it. I long to see Morton's book on the secondary fossils of America, and if that is followed by Conrad's on the tertiary shells, these two works will do more than any others to bring your treasures before the European geologists. I am often very covetous, — unreasonably so I confess, — yet I cannot but say how very anxious I am to hear from you, so soon as you can devote an hour to an unseen friend. When next I write, I hope it will be with better spirits, — at any rate with less bodily suffering; indeed, I could not bear up under this long. I shall not, however, wait till I hear from you before I write again, but if anything new and interesting comes within my reach, I shall send it across the Atlantic. My little folks leave us next week, the holidays being over; they now unite with me and their mamma in best wishes and tenderest regards to you and yours. Walter received his books in safety, and is greatly obliged to your dear boy for them. I have this day heard from Mr. Bakewell; the poor old gentleman has been afflicted with gout in his hands, — an affliction, of all others, the most annoying to a literary man. Can you tell me if Dr. Harlan and all his treasures arrived safe? he obtained a very good collection from various quarters. You remember the teeth of the gigantic Tapir of Cuvier. Mr. Bakewell figures a grinder; they have found two perfect lower jaws of the animal at Darmstadt; strange to tell, it has two tusks at the anterior extremity of the lower jaws, and which point downwards: was ever anything so extraordinary? They must have been intended to enable the animal to grub up bulbous and tuberose roots, from under the matted fibrous roots of a forest. Adieu, my dear, kind friend. I am suffering so much I cannot write more. May Heaven bless you and yours.

FROM DR. MANTELL.

BRIGHTON, *June* 18, 1834.

. . . . . YOUR admirable letter on the harmony between geology and the Mosaic records, has been read with great delight and satisfaction by many of our intelligent clergymen, who felt unsettled in their opinions upon these subjects. Can it be obtained apart from the volume? If it can I shall order some, for many of my friends are anxious to possess it. Your paper on the explosion of steamboats was of great interest to a friend of mine here, Mr. Ricardo, (brother of the late celebrated David Ricardo, the political economist,) who is deeply interested in such subjects. The volume and atlas on the Geology of Massachusetts, reflect great credit on the author, and on the enlightened government who patronized the undertaking. . . . . Lyell is off to Norway and Sweden, to examine into the proofs afforded of the gradual elevation of these countries, which is supposed to be still going on. Murchison is off to Wales, to complete his grand geological survey of a part of that principality, which he intends to publish in a separate work, and I have no doubt it will be one of great value and interest, for he has time, talents, and fortune, at his command.

Buckland is employed on his Bridgewater Essay, (or at least will be, so soon as the Oxford fooleries are over;— think of the Duke of Wellington being the Chancellor of our first University, — there is no hope for mankind while the brute qualities of a mere soldier claim the highest rewards of *learning!*) — which is to be out in August, the plates will be numerous and beautiful. . . . . The box will contain the copy of Mr. Hawkins's work,— the portrait of the "*inventor*" of the Iguanodon,— as my friend Horace Smith facetiously terms me, — and a few scraps of miscellaneous scribblings of mine, and some fossils.

FROM DR. MANTELL.

Of Agassiz, I ought not to omit mentioning that he is a highly intelligent, unassuming, liberal man; he spent four days with me, and although the then dangerous illness of Mrs. Mantell and the presence of Dr. Buckland, occasioned considerable interruption to his investigations, I learned much from him, and parted with him with great regret. He was in ecstasies with my wonderful fishes. My salmo, he considered with me as belonging to the family of Salmonidæ, and from its analogy to the smelt (osmerus) he named it Osmeroides Mantelli. . . . . And now I have a piece of news which I am sure will give you pleasure. I verily believe I have persuaded my friend Lyell to visit your country and you! Alas, I cannot come, — there is no hope for me. My only prospect is a life of labor and anxiety. Too happy shall I consider myself, if ever I can get employment, — this is hard after twenty-three years' intense labor, but so it is! To Lyell what a field of honor America opens; no one is so well acquainted with the tertiary formation as he; and I am quite certain that there is a rich harvest for him. He begins to talk seriously about it; if he does, his wife, — a charming girl, — the daughter of Leonard Horner, (formerly of the London University,) will accompany him. . . . . : Brighton is very full; the Royal family came a fortnight ago; but to the surprise and regret of the greater part of the nation, the King has dismissed his liberal ministers, and that tyrant Wellington, and Peel, are to form our administration; what the result will be Heaven only knows. I think it is impossible to retrograde; but nothing can be predicted with any certainty. In consequence of these political changes, the King and Queen left the palace here yesterday morning, and it is supposed will not return this season; if they do not it will materially injure this town for the present winter. I fear America will be the only hope left for freedom, — but she must get rid of her cursed slavery!

FROM DR. MANTELL.

June 26, 1840.

. . . . . I WAS introduced to Prince Albert a short time since, and presented him with the German and English editions of the "Wonders"; he is a very affable, intelligent, handsome youth, and those who are intimately acquainted with him assure me he is very amiable; what a pity he should be exposed to such a court as ours!

FROM DR. MANTELL.

June 14, 1841.

MY VERY DEAR FRIEND,—. . . . I was about to write to you to inform you of Mr. Lyell's intentions, which he communicated to me but a short time since. I dined with him last week, — a farewell party. His charming little wife (a daughter of Mr. Leonard Horner) accompanies him. I have said so much of you and yours, to her, that she is quite anxious to visit New Haven; if she does, I am sure you will all be delighted with her. And now for a strictly private sketch of my old friend. About twenty years or more ago, one beautiful summer evening, a young Scotchman called at Castle Place, (Lewes,) and announced himself as a Mr. Lyell, who was fond of geology, had been attending Jameson's lectures at Edinburgh, had visited his former Alma Mater, Midhurst Grammar-School, in the west of Sussex; and rambling about the neighborhood, found some laborers quarrying in stone which they called "Whin." As this term is *Scotice*, Trap, the young traveller was much puzzled to know how such a rock appeared in the south of England, and upon inquiry of one of the laborers why the stone was so called, the man referred him to "a monstrous clever mon as lived at Lewes, a doctor, who knowed all about them things, and got curosities out of the chalk-pits to make physic with." The man, in short, had been formerly a Lewes quarryman, and one of my collectors. Mr. Lyell being alone and on horseback, and having noth-

ing better to do, rode gently over the South Down, some twenty-five miles, and at the close of the day, found himself at the residence of the future "Wizard of the World," as Dr. Buckland designates your humble servant. We were mutually pleased with each other; my few drawers of fossils were soon looked over, but we were in gossip until morning, and then commenced a friendship which has continued till now. Mr. Lyell was educated for the Bar. He practised on the western circuit seven or eight years, and he allowed me to correspond with him only during the vacations. His father, who is a Scotch Laird, is still living, and there are several sons and daughters. Mr. Lyell is the eldest, and at the death of his father inherits the family estate, which, I believe, is moderate. However, about seven or eight years after our acquaintance, Mr. Lyell, with great good sense, abandoned his profession, with his father's consent, and devoted himself wholly to geology, content with a moderate income, and living in a very unostentatious manner in an unfashionable part of the city. A few years ago he married Miss Horner, who is much younger than himself, (Lyell is forty-five or forty-six,) and a more suitable companion he could not have found. He has no children. In person, Mr. Lyell presents nothing remarkable, except a broad expanse of forehead. He is of the middle size, a decided Scottish physiognomy, small eyes, fine chin, and a rather proud or reserved expression of countenance. He is very absent, and a slow but profound thinker. He was Professor in King's College, London, and gave lectures there and at the Royal Institution, but it so happened that I never heard him lecture. He always takes part in the discussion at the meetings of the Geological Society, but he has not facility in speaking; there is hesitation in his manner, and his voice is neither powerful nor melodious, nor is his action at all imposing. As a popular lecturer, he would stand no chance with Buckland or Sedgwick. He is providing himself with very beautiful illustrations for

his lectures, to astonish the Bostonians; and I should suppose the prestige of his name and his European reputation will insure him a flattering reception. I should like to have accompanied him. He goes first to Canada. . . . . I understand Mr. Lowell was very anxious to induce Faraday to come over and lecture on Chemistry. But poor Faraday, like several of our best men, has overworked himself, and is obliged to lay by altogether. . . . . There is a hauteur or reserve about Mr. Lyell to strangers, that prevents his being so popular among our society as he deserves to be. I believe him to have an excellent heart, and he is very kind and affectionate, when his better feelings are called upon. I have had some reason to complain on points relating to authorship, but that perhaps is mere weakness of human nature. I am very much attached to him. I have only to regret that he has not that warmth of feeling which I hoped to find in him, and which would have rendered him an invaluable friend to me. . . . . Perhaps we Southrons are of more excitable stuff than the Northerners.

TO DR. MANTELL.

NEW HAVEN, *September* 25, 1841.

. . . . . OUR house is a mile and a half from the depot, and the whole distance is through the streets of the town. By and by Mr. Lyell says, — after riding a mile, — are you carrying us to the Tontine? "No, to another house where, although your entertainment may not be as luxurious, your welcome will be quite as hearty! Mrs. Silliman and my daughter present their respects to Mrs. Lyell, and invite her, as I do her husband also, to the hospitality of our house. Your chamber is ready, and we shall make the best use of our time in being together; we will, if you please, banish all reserve, and be acquainted at once." They took us at our word, and we were soon at my door, where Mrs. Lyell met a warm welcome from the ladies. This was Tuesday evening, and they remained with us until Friday

noon. We were very much gratified by their frank and cordial deportment. Mr. Lyell was animated and interesting, often eloquent, and full of geological zeal, which was fully indulged in excursions around our noble trap region. Mr. L. shouted from one of our hills, that it was "a glorious country," (geologically,) and most picturesque and beautiful. Mrs. L. was out with us on the first day with one of my daughters; but our work was afterwards too laborious for her, — among trap mountain precipices, defiles, and stone quarries, &c. Mr. L. found much to theorize upon, and except, now and then, a few moments of abstraction, when with his hand upon his forehead, he was involved in deep thought, he was as lively and agreeable as any one could be, and appeared greatly delighted with the scenes around him, which he said possessed a strong interest and a high degree of freshness. We had several good geologists with us, at least, five besides Mr. Lyell. Mrs. Lyell made herself most agreeable in our family. We were charmed with her winning, affable manners; we endeavored to see that they were furnished with the comforts of an English home in America, and they appeared to enjoy being identified so early with an American family, where Mrs. Lyell said she should not have known that they were not in England; and we went with them to the steamboat on their departure for New York. She said that they had seen and enjoyed enough in the twelve days they had spent in America, to pay them for crossing the Atlantic. In short, their visit to us was altogether delightful, without the slightest thing to create regret or momentary embarrassment. We were just as free as if we had been always acquainted; and Mr. L. confided to me his plans and views with perfect frankness. We wanted nothing, my good friend, but your presence to have made our interviews as happy as possible, and you and your reputation and interests were often on our tongues. The circumstances you relate are not agreeable, and I wonder at them the more, because the anniver-

sary address, by Mr. Lyell, before the Geological Society, was full and warm in vindication of your discoveries and merits, and you may remember it was republished in the "American Journal." Mr. L. is now republishing his works in Boston, having brought over the wood-cuts with him. He is, to begin there on the 19th of October, and lecture six weeks. He has told me of his huge drawings, and Mr. Bakewell has prepared eight more for him on a huge scale, drawn principally from his own works. He thinks the drawings I have lectured from quite too small, and counts much upon the aid from his large drawings. He is anxious that I should be present at his beginning, to aid him by my advice. It will be extremely difficult; but I shall try to break away for a few days and hear a couple of his lectures. He has been through the State of New York with Mr. Hall, a clever young geologist of that State, and has written me that he has been much gratified; a week since he was on the Hudson, near the Catskills, and, I suppose may, ere this, be gone into Pennsylvania with Professor Rogers, as he was anxious to see that State, as well as New York, before beginning his lectures. His plan is to go South in the winter, and return again to the North in the spring. He intends to finish a year in America. Canada, I suppose, he will visit next summer. I have not heard a word of the impression he has made elsewhere, except on my friend, Wm. C. Redfield, who was his active companion in New York, and up the Hudson to Albany. Mr. R. was much pleased with them both, and said they were delighted with the glorious scenery of the Hudson, on a bright day, in one of our fine steamboats. Thus much of our friends.

TO DR. MANTELL.

NEW HAVEN, *December* 14, 1841.

. . . . . THE painful and alarming infirmity with which God has seen fit to visit you, gives us great concern; but we observe with great satisfaction the very becoming re-

ligious feeling with which you regard it. As the affliction is hitherto confined to the lower extremities, it may be consistent with continued life, and even usefulness, — for many instances occur of afflictions of this class remaining in abeyance for many years, although they are certainly of anxious and doubtful presage. I know not what have been your table habits; but permit me (I trust without offence or indelicacy) to remark that, if like most English gentlemen, as the habits of society were when I knew England, you have been accustomed to perhaps a tumbler of porter with your dinner, and two or three glasses of port or madeira after it, you will, I have no doubt, find great advantage by dropping them all, and relying on water and nutritious food, — simple and sufficient, without redundancy. Wonders have been effected in this country by such changes, and I am myself a monument of their efficacy. Eighteen years ago, through fatigues and excessive labors, anxiety and grief, I was almost broken down in my nervous system; and, although not paralytic, I had severe spasms and frequent numbness of limbs; but now, by God's blessing and a resolute perseverance in simple habits of living, without alcoholic drinks, I am, when past threescore, hale and active, and in body and mind able to sustain incessant labor. You will pardon me if my remarks are superfluous, for I am sure you will regard them as well-intended. You speak of relaxation, — most desirable, no doubt. Can you not place some professional friend as a *locum tenens* in your place, while you embark in the spring for this country, and pass a few months — or weeks, if you can spare no more time — with us, making our house your home, and regulating your excursions as you may find it convenient and agreeable; and, if Reginald or your daughter should accompany you, so much the better. Will you give me your thoughts on this hastily expressed suggestion, on which I have now not a moment to enlarge. . . . . I am glad that the bust pleases you, and I am glad it ar-

rived safely and has cost you no more. I shall be much gratified with the medallion, which I hope you will have executed to your satisfaction. I have heard Mr. Lyell three times, having gone to Boston on purpose, (and B—— after me,) and also to see his fine illustrations, — a few of them very magnificent in dimensions and in execution. He is certainly not a fluent and easy lecturer; but his dignity, simplicity, truth, great personal experience, candor, and logical exactness, have won for him the confidence and esteem of a thinking people, — disciplined, even in the middle ranks, to strict intellectual attention.

FROM DR. MANTELL.

June 7, 1842.

. . . . . A VERY elaborate paper of Mr. Lyell's on your tertiary and crustaceous strata was read lately, of which an abstract appears in this week's "Athenæum." It is not very lucid, and appears to me to abound in those trivialities of percentage which are not of sufficient importance to justify any important generalizations. Every day is showing the fallacy of trusting to negative evidence. Agassiz's geological distribution of fishes must already undergo important modifications; and the scenes (cenes) — if you will allow a pun — of Lyell's tertiary drama will have to be shifted as often as in a pantomime. But this is heresy; — so breathe it not! I saw poor Mr. Bakewell last week; he has still mental energy, but is as deaf as a post, and very helpless indeed. Notwithstanding what your son assures me, and Mr. Lyell's opinion, I still think Professor Hitchcock's bird-tracks will be found to be reptilian. I have heard but once from Mr. Lyell since he left England. Mr. Murchison's memoirs on the geology of Russia will appear in a separate work in the course of next spring; his *soirées* were very brilliant and well attended. At Lord Northampton's, (the President of the Royal Society,) Washington Irving was present, but I was not there on

that occasion. I attended the last *soirée*, and exhibited my new microscope. Prince Albert was present, and I showed his Royal Highness that beautiful animalcule,—the stephanoceros, and some vorticellæ, and other rotifers, fed with carmine. He was much gratified with their examination, and appeared to be fully conversant with their nature.

TO DR. MANTELL.

YALE COLLEGE, *September* 15, 1842.

. . . . . I THANK you for your remarks upon the Iguanodon, and I should like to know, when you write again, what dimensions you now give to the tail, — how much, for example, you have shortened an iguanodon of seventy-five feet in length, as formerly estimated by comparison with the leviathan! I am much amused by the comparison with the leviathan. Owen's splendid work came in the same parcel with your elegant little book on a pebble. The copies directed were gratefully received, and all the ladies (including Mrs. H———, who is with us) beg to present their best thanks, in which I candidly unite. I have read this miniature Geology again, and find you have enriched and enlarged it, and am glad to find that it is in its sixth edition; may it reach its twentieth. I have had time only to look cursorily over Mr. Owen's article on the Iguanodon. He appears to intend to do you justice; but perhaps there may be something said or omitted in some other part of the work which I have not seen, and which would alter my impressions. At any rate, you are wise in avoiding strife, and in cultivating those calm and heavenly feelings so beautifully illustrated by Mrs. Hemans in the verses which you quote. I am sorry to hear that you still suffer; but it is apparent from your chirography that your nerves are composed (the pen does not flow easily and correctly when the nerves are agitated); and your mind is evidently in vigorous action, however your feelings may be saddened. . . . . The passage in your letter relating to

Dr. Deane I have copied and forwarded to him, and he will be gratified to find that the subject interests you. He writes me that he is preparing a box for you, and he will send you some remarks of his own in elucidation of the subject. He is preparing to make plaster casts of all the important specimens that have been obtained, and, being colored like the rock, they will correctly represent the originals. He will probably send you a set, and he will wish your mature judgment upon them. He says that the most valuable and valued returns which he can receive from you will be your own works, and any medical books you can spare. He is a very deserving man, and has spent much time and labor upon this research, and that with very slender means; perhaps by and by you may write him a few lines, which would gratify him very much. . . . . Some of our people rendered themselves ridiculous by deifying Dickens and running mad after him, and he has repaid them with abuse, — proving himself a man of low and vulgar mind. The attentions to Mr. and Mrs. Lyell were, on the contrary, very proper, calm, respectful, and kind, without adulation or folly. You will see a good paper and drawings by Owen in the July number of the Journal, proving, as you have heard, that the impression is artificial. My son thanks you for all the kind things you say of him. I now hear his voice, with his mother and sisters, and his lovely wife, all of whom love you, and send their kindest remembrance, which you will also present to your daughter and to Reginald, to whom, I observe, you have very properly dedicated your little book. We will jog Bailey as to his omissions; and Benjamin says he will forward to you some of the Virginia earth, and write to you soon.

FROM DR. MANTELL.

SURREY, *August* 12, 1843.

. . . . . PRAY thank your excellent son for his postscript, which breathes the same kind spirit with yours. May

Heaven bless you all. I continue much as I was,—not worse, not better, so I must bear on, and be thankful to the Giver of all good. Our poor friend, Mr. Bakewell, has again had a relapse, and is apparently fast sinking away. A month since I was summoned by his excellent wife to meet their usual medical attendant, and I hurried home from Derbyshire, where I had been sojourning a week, to see him. He rallied a little, but is now much worse, and death would indeed be a release. I am just returned from visiting him; he knew me, pressed my hand most affectionately, but was unable to converse; he is in a lethargic state; yet at intervals is quite himself, as to memory and intellect. When I saw him, four days since, he was capable of conversation, and when I was leaving, expressed a hope soon to be released from this state of suffering, but that if he lived on, that I would see him again. I think to-day's visit must be my last, for I can now be of no service to him or Mrs. B., and the scene is too much for me in my present state of suffering.

FROM DR. MANTELL.

August 28, 1843.

My letter, written about a fortnight since in reply to your last favor, will prepare you to hear of the death of my excellent friend, Mr. Bakewell. I did not see him after the interview described in my last. . . . . Mrs. B. wished me not to write any notice of his death, or any review of his scientific labors, for our Journals,—an injunction with which I complied reluctantly; for it would have been a melancholy satisfaction to me to have paid a just tribute of respect to the memory of one I so much loved, and who had so greatly contributed to the advancement of knowledge. His merits, as a geological writer and teacher, have never been so highly appreciated as they deserved to be in this country. He never joined any of our scientific societies; the only meeting of the Geological society of

London he was ever present at, was the one at which I read my memoir on the Hylæosaurus, (afterwards published in the geology of the South East of England,) and exhibited to a London audience my fossil bones from Tilgate Forest. He always spoke of that evening with great delight; and so completely was he carried away with his kind feelings towards me, that at the close of my address, he loudly applauded, (though contrary to etiquette,) and was joined involuntarily by others. Since our first acquaintance our friendship has known no change. I greatly lament his loss. . . . . Mr. Dana's papers interest me exceedingly; they are of the highest order. I anticipate great things from him; and look forward with impatience to the more full detail of his opinions and observations. . . . . .

TO DR. MANTELL.

NEW HAVEN, *February* 10, 1844.

MY DEAR FRIEND, — Your very welcome letter of December 26, arrived January 23. It acknowledges mine of November 14, and I trust that you soon after received another from me of November 26, in reply to yours of October 30. There is no correspondent out of my own family to whom I write so frequently, and so long letters as to yourself, because you tell me that they cheer you under your trials, and I would cheerfully devote many hours in the year to that object, especially as it is always to me an interesting employment. I am very sorry that "the prospect of ever being better becomes less and less." I earnestly hope that you may prove in an error, and while you exhibit so much mental energy as to carry forward elaborate works, demanding much thought, wide study, and graphic skill, I cannot give you up, but will feel some confidence that the infirm body which holds such a mind, may yet rally and throw off its load of infirmity. In my last, I think it was, I inquired somewhat more particularly as to the nature of your complaint, — inquiries prompted, not by

a vain curiosity, but by a deep interest in your painful case. How I wish I had your new work to accompany me to Baltimore, where I shall, I trust, be, when this letter reaches you, and in which city I am pledged to begin a course of geology in ten lectures, on ten evenings, the first of which will (D. V.) be March 4th, Monday, and so on in the alternate evenings of the successive three weeks, to end March 25th. If it is possible for a copy of your work or any part of it in sheets to reach me there in March, I should have great pleasure, and no doubt advantage, in glancing over your pages and your beautiful illustrations; and I should not fail, nor shall I at any rate fail, to give you due honor before an intelligent and polished community. . . . . I am glad to observe that you view your afflictions in their moral bearing; may God in his infinite mercy make them available — not as of merit, but as moral agents — for your final salvation through the Redeemer. I am, although in perfect health and with the physical and mental energy of early days, admonished by the rolling years, by my spreading family, — now becoming numerous in the second generation, — and more than all by the dropping of friends around me like autumnal leaves, that my own time is coming. God grant that come when or how it may, I may be found ready! Your kind and most beneficial exertions in favor of Dr. Deane, were mentioned with gratitude in my last letter, and ere this you have no doubt received his own warm acknowledgments. I am very much obliged, as well as he and our American geologists generally. When you see Lord Northampton and Dr. Buckland, be pleased to present my thanks to them for the generous course they pursued. . . . . .

FROM DR. MANTELL.

May 21, 1844.

I HAVE this moment written the last word in my "Medals of Creation," and with the same pen address you, — a pleasure

which I resisted until my arduous task was done. I wrote to you immediately on the receipt of your last, and sent you a proof-sheet of "Infusoria," which I trust you duly received. Your letter of November arrived afterwards; the cause of its delay I cannot even guess at. I have gone on much as usual, but with more continued and severe suffering, occasioned by additional mental anxieties, and perhaps from over-study, for I found my work very laborious at last. Thank Heaven, it is over; it will be published next week in two very handsome volumes, — about nine hundred and eighty pages in the two, — the price, eighteen shillings or twenty shillings, I know not which. The greatest pleasure I anticipate from its publication is your approval. I feel certain you will be pleased with it, and consider it as my greatest labor; not so much from the quantity of original matter, but for the manner in which the whole science of palæontology — from the fossil moss to the fossil monkey — is placed before the intelligent reader.

FROM DR. MANTELL.

July 18, 1844.

. . . . . OUR island has been visited by several of the continental sovereigns this year; among others by the King of Saxony, who, as you know, is one of the most enlightened and amiable princes in Europe. He is a great patron and cultivator of science, and Sir Robert Peel, (our Premier,) upon entertaining his Majesty, invited our leading philosophers to the party. At the King's request, Sir Robert very kindly invited me also, and fortunately I was well enough that evening to attend, and was received most kindly by the King, whom I found a very affable and intelligent man. Sir Robert Peel told me he had been reading my "Medals" before breakfast that day with great delight. The King has since visited Matlock and Faringdon, in consequence of my account of the geological constitution of those places.

FROM DR. MANTELL.

February 28, 1845.

. . . . . Poor Mrs. Lardner, what madness must have possessed her! I knew her well as Mrs. Heaviside, — an elegant fashionable woman, an affectionate wife and mother; by no means of strong mind, and without any taste whatever for science of any kind. I dined with her, the last time I dined out, before I left Brighton; and when I heard that a married woman from Brighton had eloped with the villain Dr. L., Mrs. Heaviside was the last woman I should have guessed as the party. Poor Captain H., when he found she was eloped, had not the slightest idea that Dr. L. had seduced her away. There are many astonishing events of this kind which one cannot possibly unravel. I have corresponded with Dr. L., but never saw him. Our old friend, Mr. Bakewell, who was a shrewd observer of mankind, always thought badly of him, and regretted that one so clever was so worthless. . . . . .

TO DR. MANTELL.

New Haven, *July* 22, 1845.

My very dear Friend, — Although I wrote to you only on the 13th instant, by the last steamer, still I will not let the one now in port return without a response to your very kind letter of June 21st, this day received. I thank you for remembering me again so soon, but having written to you so recently and fully, I now take a small sheet and just chat on as if you were here. I thank you for the extract from Sir J. Herschel's address. It is, in all respects, a sound and judicious view. I have always, in my public lectures, opposed the doctrine of equivocal generation, and also, Lamarck's absurd theory of transmutation; maintaining that every new organized being or pair of beings was the direct result of creative power, and that there is no inherent tendency in matter to produce organized forms,

much less life and reason or even instinct. I am, therefore, much gratified by your opinion and that of Sir J. H. Those remarks on the nebular theory, also, fall in with some difficulties which have attended it in my mind. We speak of resolving nebulæ by the power of the telescope. Every addition to the power of this instrument resolves some new milky way into clusters of stars. (See the observations of South, quoted in the July number of the "American Journal," on the glorious resolution of nebulæ, by the telescope of Lord Rosse.). Now, is it not supposable that the powers of the telescope may be so far augmented, that no nebulæ will remain unresolved, and this beautiful white suffusion will disappear to the mental eye? Where then will be the proof of the gaseous or diffused condition of matter? Will it not be sustained by those comets above, which permit the stars to be seen through their misty and mysterious haze? But, perhaps, I only display my ignorance of the nebular theory, having never studied it profoundly. . . . I think Mr. Murchison promised me his work on Russia, but I do not wish to have you jog his elbow; nor Lyell's either, although I have done the latter all the service in my power, and with good will. The frequent disinterment of the bones of unknown animals, or of those that only bear some resemblance to existing races, goes to prove that geological evidence must be ever accumulating, and all these facts range happily under established principles. You inquire about Mrs. Dana; she remains with us, with her husband, and will, I trust, for some years; for several more years must elapse before the great work which Mr. Dana has in hand, can be finished, although he is a man of indefatigable industry, and has a happy tact in throwing off his work with expedition, with condensation, and in good taste. Oh, how happy I should be to have you among us, identified with our family; but I suppose we must not indulge such a thought. I believe I sent you, years ago, a copy of my little tour to Quebec. That book opens with a de-

scription of Monte Video, the rural villa of my brother-in-law, — Daniel Wadsworth, Esq., of Hartford. It is on the summit of a trap-mountain,* with a beautiful crystal lake with fine fish, a tower rising above all other objects, and a glorious view of the splendid valley of the Connecticut, of a wide region, one hundred miles in diameter. I think I told you in my last letter, that my son and his little family are now there. . . . . .

TO DR. MANTELL.

NEW HAVEN, *December* 29, 1845.

. . . . . I WAS not without some anxiety lest your infirmities had increased upon you, but our friends, the Lyells, who lodged with us in the first week of this month, relieved me on that head. I wrote to invite them here again on their way south, and a note from Mrs. Lyell informed me that they would stop. They were with us but one night, and a few hours in the morning; the visit, although short, was very agreeable. Mrs. L., lady-like as usual, and none the worse for four years more of time, while he was evidently improved in cheerful and attentive manners, and was not once absent-minded, so far as I saw. They are on their way to New Orleans, and will pass up the river in the spring, as my son and I did last year. I made him out a good many introductions, all of which bore on his scientific objects, and gave him full minutes of objects and persons on his tour. They spoke kindly of you, and both expressed their surprise that you could write such interesting books, (then they referred particularly to the Medals) while you were so great a sufferer. Mr. L. appears to have become Americanized so far as to adapt himself readily to the modes of this country; and his book has paved the way for a friendly reception. . . . . Professor Kingsley arrived on the morning of October 4, and they in the evening. Mr. K. was much interested by his interviews with you; told

* Nearly one thousand feet above the river.

me many particulars of your interviews and conversations, of the dinner at Mr. Lyell's, the meeting of the Geological Society, &c. He told me that I should be much pleased with you should I know you, and *that* you know I have a long time been, without having seen you. Professor K. has quite come out, — a shy man he was and very retiring, but he is now very communicative, and very entertaining and instructive. But I am running on without answering you. I congratulate you upon the completion of your work on animalcules; your letter was only in time, and just in time, to have it announced in the Journal, with the new editions of the other works, and a mere mention of Murchison. . . . . I shall wait with impatience for your account of the recently discovered bones of the Isle of Wight Iguanodon. They are indeed colossal; but I thought it would not be your wish to have the facts named in the "American Journal," until you had matured the subject and communicated your paper; and I have been silent also, regarding the discovery of Faraday on light and electricity, except that we have cited, from the "Athenæum," a notice of the experiment you saw, but not so full.

TO DR. MANTELL.

NEW HAVEN, *January* 27, 1846.

. . . . . I SUSPECT that Mr. Lyell will give you another volume on this country, especially as we are not about playing the fool by going to war about Oregon or the moon, which would be about as rational. I am glad that you like that review of Lyell, in the Journal, as it was written by B. S., Jr. He and his lady thank you most cordially for your kind and hospitable invitation to your house; but I fear it must be long before it can be accepted, probably never by the lady; but I am not without hopes that her husband may one day cross over, for I have no doubt it would be highly advantageous to him. . . . . I regret to hear that geology is on the decline with you. I hope it may revive. I fear

it will decline here when the geological surveys are over. There seems, however, to be a great deal of curiosity in this country relating to geological subjects. A few months since, an announcement was made of the discovery of an enormously large human skeleton in Tennessee; the young men came to me and inquired what they were to believe, and I told them I had no doubt it would prove to be a Mastodon. In the mean time, the proprietor raised the creature upon its hind legs, as the bull used to be represented in our Cock Robin picture-books, ringing the bell at poor robin's funeral. By a pretty liberal use of intercalated *wooden* bones, they contrived to make this geological Goliath sixteen feet high; but their hopes were all dashed by Dr. Carpenter of New Orleans, who pronounced it to be a *Mastodon Rampant;* and the mystified proprietor has taken down the bones and boxed them in a wooden sarcophagus away from human view.

FROM DR. MANTELL.

February 24, 1846.

. . . . . MR. MURCHISON is now Sir Roderick, — the Queen having knighted him that he may wear the red-sash, cross, and star of the orders the Emperor of Russia bestowed on him. I mentioned before that Dr. Buckland is now Dean of Westminster. The first *soirée* of the Marquis of Northampton, as President of the Royal Society, took place last Saturday. I went with Reginald (Lord N. having kindly invited him). The spacious room was crowded with men of science and literature, and many of the nobility. Prince Albert was there, and I had a long gossip with his Royal Highness on the geology of the Isle of Wight. I had taken a beautiful geological model to exhibit, which served as a text. As the Queen resides many weeks every year in the island, and has purchased a large estate there, the Prince feels interested in the spot; and I hope, when my little volume comes out, his attention may be directed to some of the interesting phenomena to be

met with there. . . . . You will have seen by the papers that even new potatoes, sprung from apparently healthy tubers of last autumn's sprouts, evince the deadly malady, — the cause of the disease is as inexplicable as that of the cholera, and apparently as irremediable. Hitherto the London markets (that is, the best) have had good potatoes; but of late, our potatoes, purchased of the first-rate dealers, have proved so bad when brought to table, that for the first time in my life I dine without potatoes. In Ireland the evil will ultimately be a great benefit; more wholesome and less precarious vegetables will supersede the solanum, which Cobbett, with a shrewdness and sagacity he so often evinced, declared would prove a national curse, from the habits of idleness it permitted. In the midst of all the suffering of the poor, the discontent of the lower middle classes, the slaughter of our armies in India, and the dreadful pressure of the taxes, and the inquisitorial mode of their collection, the wealth and luxury and gorgeous pomp of this mighty Babel are as great as ever. As I came through Piccadilly this afternoon in my humble carriage, scores of the most superb equipages, laden with bevies of servants in the most splendid liveries, rolled by me on their way to the Queen's drawing-rooms, held today at St. James's Palace; and yet the Mall and the Park were thronged as much as ever with carriages and equestrians! The extremes do indeed meet! Abject penury and excessive riches! And now, while I am writing, every place of amusement is crowded to excess; and such amusements! I quite long for the "peaceful hermitage." I long to see Mr. Dana's work on corals, — few subjects interest me more.

TO DR. MANTELL.

BOSTON, *May* 1, 1846.

. . . . . I AM very much obliged to you for the very lucid sketch of Faraday's lecture, which is very interesting and very surprising. Some of the results are indeed such

as I have long been accustomed to show in my class-room, but not on so large a scale, nor with so high a power. The thing that most surprises me is the right-angle relation of the magnetism of iron and of most other things. How far the attraction of other things than iron, by magnetism, may be resolved into electrical influences, it may not perhaps be easy to decide. We know that currents of electricity accompany the magnetic influences, and perhaps cause them; but, after all, what is electricity? We are perhaps as far as ever from answering this question; but we appear to be on the eve of great things, — just opening a vista whose termination no one can see.

TO DR. MANTELL.

NEW HAVEN, *May* 27, 1846.

. . . . . I AM now, in a day or two, to begin my summer course, which will end about August 8. J. D. D. having finished the zoöphytes, is now engaged on his geology of the regions visited by the squadron; and B. S., Jr., is deep in an elementary work on chemistry for academies and schools. I regret that the work is printing while it is still writing, — not always a safe course even for a veteran author, and always anxious for a young one; but we are all on the *qui vive*, and hope to escape any very important mistakes. You will see that we have a war with Mexico. It might have been avoided; and all wars that can be avoided are of course wrong. As regards Mexico, there is perhaps little to fear; but we greatly dread being drawn into a war with you or with France, for the balance of power, or any other phantasm of politicians. You will have observed that a small American army has sustained itself against, and beaten, four times their number; and there is reason to fear that the military spirit, now fast rising in this nation, and popular with our democracy, will kindle into ambition of conquest, which, I suppose, you and your neighbor will not permit to go, without being checked,

to the gates of Mexico and to the shores of California. My family are well, and one and all unite in affectionate remembrance and best wishes. . . . . .

FROM DR. MANTELL.

June 21, 1846.

. . . . . In the geological world, Murchison and Lyell monopolize everything. Russia and America, roast, boiled, cold, hashed, and fricasseed, are the dishes set before us at Somerset House, till, like the poor Frenchman, we exclaim, — "Helas! toujours perdrix!" And, I doubt not, the same viands will be the principal subjects at the meetings of the British Association of Science in the geological section. . . . . .

FROM DR. MANTELL.

September 21, 1846.

. . . . . I MENTIONED that I had engaged to write a popular work on the "Geology of the Isle of Wight." As the British Association of Science was to meet at Southampton this month, I was very desirous of getting the book out in time to serve as a hand-book for the visitors; but my repeated interruptions from illness rendered this impossible, and I have only been able to print about forty pages and the map, &c., and a few of these were sent down as specimens of the work. I fear the volume will cost me two months' labor more, even if I devote every leisure moment to it. You will smile incredulously, I doubt not, if I add that this shall be my last work on geology and its kindred sciences, but I do indeed intend it to be so. If I should have energy enough left, my "Nervous System" must, for many important reasons, occupy my whole attention; and with that I believe my task and my weary pilgrimage will terminate. A month since I went to R. in the Isle of Wight, from Monday to Saturday, (the longest holiday I have had these two years,) but though the weather was

most delightful, yet I derived but little benefit from so short a change. I resolved not to go to the British Association, from the fear of the fatigue overpowering me; but last Monday I was tempted to go down in the afternoon, and return the following evening; for the papers announced a lecture on the Geology of the Isle of Wight, for Tuesday, and I was anxious to hear what the savans said upon the subject. This turned out to be erroneous; however, I met very many persons I was glad to see; heard Mr. Lyell lecture for two hours on the "Delta of the Mississippi," to a crowded and fashionable, mixed audience, and saw some objects of interest, both fossil and recent, and returned home much worn out, even by that little exertion. You will see in the various papers all the particulars of the meeting: of Prince Albert having joined them, and having subscribed £100 to the funds; how Sir Roderick was received by the Queen; and how the savans feasted and danced, and made merry, &c. But not the slightest interest was evinced in the objects of the meeting by the resident gentry, with three or four exceptions. The fault of the meeting appeared to me to be the popular character that was professed to be given to its proceedings, to induce ladies and gentlemen (not scientific) to subscribe their guineas, and then having their sectional meetings as dry and technical as if *savans* only were present. The "Illustrated News" of to-day, gives portraits of thirty of the philosophers, with Sir Roderick and Prince Albert at the head. With the exception of five or six, they are miserable portraits. Herschel, Faraday, Carpenter, Forbes, Horner, and De la Beche, are recognizable.

TO DR. MANTELL.

NEW HAVEN, *November* 16, 1846.

YOUR very kind note of September 1, and your full letter of September 21, are before me. I also received, in due season, the beautiful little volume on Lewes and its

vicinity. I have read it with much pleasure; it is very entertaining and instructive, and got up in the good taste which we always expect and always find in your writings. How rich your native region is in both historical and geological antiquities. Professor Kingsley was in the house when this little book arrived, and was much interested to see it. I have loaned it to him, and he has read it with great interest; he says it is, as far as he knows, perfectly correct, and that many of the objects described he was acquainted with. The memoir on the Wealden strata of the Isle of Wight, with an account of the Iguanodon and other reptile bones, is also received, and is very instructive. I hope that the entire head may yet be found. How numerous those reptiles must have been! I am surprised to hear that your excellent house at Lewes will neither let or sell; no doubt it must bring up to your mind most interesting associations, both pleasing and painful, and you have made me so familiar with the scenes of your earlier life, that were I again to visit London, I should be off as soon as possible to Lewes, Tilgate Forest, Beachy Head, and again to the "Isle of Wight," in which beautiful island I passed two days in August or September, 1805. Alas, how time flies, — forty-one years ago, — I was then an active, zealous young man, and by God's blessing I am still an active, zealous old man, with no diminution of physical power or mental energy, — so at least it appears to me, and so my children tell me. Oh, how I wish that as regards health, you could say the same. I am afflicted by your sufferings, — protracted, severe, and as you oblige me to admit, irremediable. May God give you patience and resignation. I trust you have both, and also that good hope through our Saviour which is as an anchor to the soul, sure and steadfast. What surprises me most is the amount of labor you perform, and the mental power which seems to rise superior to corporeal suffering. We shall hail with much interest your forthcoming work on the "Isle of Wight." I am now in the midst of my public

course on chemistry, and during the three months of almost daily experimental lectures which it occupies, I can hardly admit a thought on any other subject of science. But geology is in the house. Mr. Dana is far advanced in his geology of the Pacific Islands, and other regions visited by the American exploring expedition. From some parts of the MS. which have been read to me, and from my full knowledge of his talents, accuracy, and taste, I am prepared to expect a valuable and interesting work, which will form an important addition to the science; for, general conclusions grow out of his local facts, and his mind being mature, —his age is about thirty-three, — and his observations extensive, I have no anxiety for the result. I beg you not to increase your labors by writing to me, while you have the "Isle of Wight" in hand; it must be a great and laborious work, and I know by some experience, how inconvenient and exhausting it is to turn aside from an engrossing labor to write letters. I confess I am all the while anxious about you, and would only ask for a brief note now and then, just to assure me that your severe malady has not quite borne you down. Even a newspaper, occasionally, with your initials on the wrapper and the date, would much relieve my anxiety. I am glad you could go down to the Association, even for a short time, but am surprised that they are willing to cheapen science for the sake of the guineas. Mr. Lyell has sent us his remarks on the Delta of the Mississippi, and we have the Athenæum reports of the doings of the association, but I have not as yet had leisure to peruse them; it was too late to say anything of them in our number for November 1st, but we shall mention them in the January number, 1847.

At last Agassiz has made his appearance; he announced himself from Boston about a month since, and I gave him a prompt reply. He then came on to make our acquaintance; B. S., Jr., and I went to the hotel on the evening of his arrival, and took him home as a guest. He lodged at

B. S.'s, Jr., but was domesticated in both our houses, and won us all by his affability, good-humor, and accommodating disposition, in addition to his fine person and cordial manners. October 17th he attended my lecture. I had announced him to the class in attendance, about two hundred in number, with a wing of some thirty or forty ladies. I was on that day upon evaporation, and managed to bring the subject through natural evaporation to rain, snow, and snow-capped mountains and glaciers, at which point, (having before spoken to him,) I appealed to him as an experienced observer, and invited him to say something to the students on the subject. He rose with some little appearance of embarrassment, but acquitted himself very well, and gratified many young people. We, of course, showed him our public rooms and collections, and I went with him to the top of the East Rock, — a trap precipice of nearly four hundred feet high within a mile of the town. The view of a vast trap region of peaks, knobs, a continuous barrier of trap of wide primitive formations; our beautiful little city below with a wide cultivated plain on which it stands; and our fine deep bay of five miles, caused our Swiss philosopher to exclaim, How beautiful! *very* beautiful!

TO DR. MANTELL.

August 30, 1847.

. . . . . I HAVE looked through Mr. Lyell's references to you regarding the Wealden in the second edition of his "Elements," and I must say that he ought to have made you more prominent; but it is to be observed that the "Elements" is a condensed work, in which it is a matter of some importance to economize space, and the author would urge in his defence, that often, where he has cited your results in the page without naming you, he has referred at the bottom of the page to your works or your memoirs. He has named you several times, and twice with

thanks, for diagrams illustrating the Wealden, or the contiguous strata. It is not to be forgotten either, that some years ago he devoted a great part of an address before the Geological Society to a detailed exhibition of your discoveries in the Wealden, and on that occasion he enforced your claims and merits in a spirit and to an extent corresponding in some good degree with your own warm-hearted and generous recognition of the claims of your friends and fellow-laborers. I cannot think that you are "without friends and without influence at home," or that your name and fame will not survive your death. You will ever be honored among the founders and expounders of English geology, and among the most skillful commentators upon that of the world, especially in the department of Paleontology.

FROM DR. MANTELL.

November 29, 1847.

My labors are at length at an end; the Index is printed and corrected; and, I trust, the "Wonders of Geology" will no more require attention from me. Ere another edition will be wanted, I hope I shall sleep with my fathers, and my son Reginald will undertake the editorship. . . . . Our winter sessions have begun. There have been two meetings of the Geological Society; the first was entirely occupied by a long paper of Professor Owen on some remains of Cuverian pachyderms from the Isle of Wight. . . . . The second meeting was more interesting; it was on the Geology of Australia; and one of the most successful explorers of that country, Sir Thomas Mitchell, was present, so that we had an animated discussion; but no new facts were elicited that are worth introducing in a letter. Mr. Lyell was there, and he and I had a good-humored dispute upon some of the subjects under discussion. At the Royal Society, the only incident worth remark is the election of the Duke of Wellington, who was

voted in, but with six balls against him. I am at a loss to guess the motive that induced the old veteran to wish to belong to the Royal Society. I hear of no important works on geology, nor of any new discoveries.

TO DR. MANTELL.

New Haven, *April* 11, 1848.

. . . . . Dr. Daubeny, in a late letter, accompanying a copy of the new edition of his "Volcanoes," seems half reconciled to our Mexican war, because, he thinks, that the conquest of that country might open to my "energetic countrymen" a free access to the Mexican volcanoes, which, he says, if a younger man, he should be inclined to visit, but would wait first for the Anglo-Americans to establish order in that anarchical country. I should be glad if any good might result from a war which has in my opinion no adequate justification. A treaty has been formed, and accepted by our Senate, with slight modifications, and has gone back to Mexico for ratification; but it will not be surprising if the government or faction which agreed to it should vanish before its arrival, and thus make it necessary to begin *de novo*, or to retire from the country, or hold it by force of arms, — so embarrassing is wrong-doing in the beginning, drawing after it sometimes interminable evils. I do not often occupy my letters with politics, but I am appalled with the news which every arrival brings from Europe. The French monarchy and oligarchy swept away by a popular whirlwind; in Austria, her veteran minister and some of her princes become fugitives; the King of Bavaria an exile; Prussia dictating to her monarch; Sicily and Italy in agitation; and even Poland beginning to rise again from her grave. The reliance of despots on their troops is failing them, as the troops sympathize with the people, and are slow to shed their blood. I hope these tumults will not reach you; your peo-

ple have liberty now and security; but the parts of the edifice are disproportionate. The colossal monarchy, and still more colossal aristocracy and hierarchy, with the immense expense of armaments by sea and land (in common with the other countries of Europe), press too severely upon the masses; and they cannot see why, when there is bread enough and to spare, they should starve. I am not a radical, but I do regard the welfare of the productive classes as worthy of all regard; and I fear they are about taking their cause into their own hands, in all Europe; and it will be a curious anomaly in human affairs, if that government, which in Europe has been regarded as vitally feeble, should prove to have a strong vitality because it belongs to the whole people. . . . . I am amazed that any respectable paper should allow such crudities as those contained in the paragraph you have sent me from "Bell's Weekly Messenger." It is going back to the time of Galileo's Cardinals. If this be a fair specimen of the state of opinion with you, among the religious people and the upper ten thousand, I must think that we are in advance of you; for several of our religious periodical works, and a considerable number of our clergymen, now take correct views of these subjects, and we are gaining every year, although the number is still large who confine everything to six common days, although no one, I believe, confines astronomy as much as the writer in "Bell's Messenger."

FROM DR. MANTELL.

February 20, 1849.

THE anniversary dinner of the Geological Society was held on Friday; the Archbishop of Canterbury, Sir Robert Peel, the Russian Ambassador, were there; and my friend, Sir C. Lyell, the new President, took the chair. Murchison, De la Beche, Buckland, Sedgwick, and almost all our great men, were present. The Archbishop made an admirable speech in defence of scientific pursuits, and geological

in particular; and Sir Robert a senatorial declamation in the like spirit. Lyell spoke good sense, but was so long in his pauses, and so hesitating, that I was frightened out of my wits lest he should break down. Dr. Buckland made an academical oration, like one got by heart by a young collegiate; and Sedgwick poured forth a flood of eloquence, which, in spite of the discordant tones in which it was uttered (for his voice is most harsh), carried everything before it. The Belgian Ambassador, in capital English, with just sufficient foreign accent to add to its interest, gave a luminous address in praise of science, and in just enconiums on his own country for having remained unmoved in the midst of the revolutionary tempest which had swept over the Continent. Murchison made a courtly speech, highly complimentary to the nobles present; and your humble servant, who had to respond as one of the Vice-Presidents, gave a flourish of trumpets, which concluded the entertainment. Sir H. De la Beche has been a capital President; his address, I hear, was excellent. I was unable to attend the meeting; but, as the address will be published, I shall obtain a copy for you.

TO DR. MANTELL.

NEW HAVEN, *March* 31, 1849.

. . . . . THE California mania which you mentioned is still very prevalent in this country. Several ships and several hundred people have gone from this comparatively small city of twenty thousand people; and almost every portion of the United States, especially in the North and West, is sending out its companies as well as many single adventurers. Still the accounts from California are as flattering as ever: read if you please, in the Journal, the various letters of Mr. Lyman, one of our friends, a college classmate with my son, and a man every way to be depended upon, both for integrity and intelligence. I agree with you as to the pernicious influence which this "auri sacra fames" may

produce; but there are results of deep interest which may grow out of it, that may prove a compensation, at least, to California. Although a considerable part of the population that has gone and is going to California, may be of the class of those who clustered around David when he was a hunted and hated exile, when "every one that was in distress, and every one that was in debt, and every one that was discontented, gathered themselves unto him"—and no doubt they will muster, in California, not only David's four hundred, but more, probably one hundred times that number, — still, there will be found among them no small proportion of excellent men, with the best principles, habits, and views. Many such have gone from this place and from other parts of New England, and they will, I trust, prove a pioneer pilgrim band which, like that which peopled these Northern States, will establish good institutions and laws, and remain behind and possess the land. You will see, in the January number, the views of Mr. Dana, who has seen the country, and if he is correct, the gold may not be soon exhausted; but the people cannot live upon gold, and many will, we trust, find it more comfortable, and in the end, not less profitable, to bend their backs to agriculture, and thus draw from those rich valleys wealth more enduring than that of the auriferous sands.*

FROM DR. MANTELL.

April 12, 1850.

. . . . . I AM, indeed, much gratified and affected by the affectionate and just tribute to the departed excellence you have to deplore; but your separation can be but for a brief space, and your reunion will endure forever.† How con-

* I received last evening a printed *exposé* of a projected railroad from Memphis in Tennessee, on the Mississippi, to California, — 1500 miles. If it is ever attempted, it must be as a national road, by national resources, and be maintained in the same way.

† The reference is to the death of Mrs. Silliman. — F.

solatory to the righteous mind is the quaint remark of one of our old divines, — "We have but stepped aside from eternity to be tried in this state of probation." I troubled Mr. Dana with the abstracts of my three papers, and Reginald's one, that he might make any use of them he pleased for your Journal. Our societies move so slowly, that these papers, in all probability, will not, all of them, be published for these twelve months. An author in England needs to have patience and forbearance; and I really often am surprised at myself, as well as others, going through all the trouble, and incurring considerable expense, and submitting to the captious and unfair criticisms of the referees, to whom the papers are consigned, for so trifling a result; for there are but few memoirs that could not be published by an author himself, with as little loss as he sustains by the preliminary expenses of preparing memoirs for our societies. But so it is; Providence, for some wise purpose, has so strongly implanted in us the spirit of proselytism, that we cannot resist the instinct.

FROM DR. MANTELL.

May 17, 1850.

. . . . . I GAVE a lecture last Friday evening at the Royal Institution, on the geology and the fossil birds of New Zealand, and had a splendid and numerous audience (between seven and eight hundred). It is, as you know, our aristocratic Institution, and attended by our fashionable lords and ladies. My kind friend, Professor Faraday, was most attentive, and insisted on superintending the hanging-up of the drawings, and when the lecture was over, would help pack up the specimens, and worked until eleven o'clock, and saw me into my carriage, — this was genuine kindness; and it is this great man's natural character.

FROM DR. MANTELL.

July 3, 1850.

. . . . . Sir Robert Peel, on Saturday afternoon, when riding but a few hundred yards from this square, was thrown from his horse, picked up senseless, carried home, suffered greatly forty-eight hours, and then expired, last night at eleven o'clock, in the prime of life and health and intellectual vigor. Though he was out of office, and had mortally offended many of his political friends, his death is universally lamented. I deplore it exceedingly, both on public and private grounds. He was the only one of our public men who paid any respect to the aristocracy of talent; men of art and science always found a warm friend in Sir Robert Peel. To me he had, for years, shown much courtesy; inviting me to his table when any eminent foreigners were visiting him, and always making a point to notice me, in the most cordial manner, in every public society where we happened to meet. He always read my works as soon as they appeared, and had he again been in office, I am sure he would have recommended that the Queen should bestow some distinction on me, for my unrewarded scientific labors. The event has thrown a great gloom over the public mind; but it will soon be forgotten, and the world go on as usual. When at Oxford, I was deeply affected at the absence of Dr. Buckland; never before had I been in the University without being with him, and was often his guest at Christ's Church.

FROM DR. MANTELL.

April 1, 1852.

. . . . . I am desirous you should know that my task at the Royal Institution passed off capitally. I think I mentioned to you my desire to make it a dashing affair, because I was last year refused permission to lecture through ——'s insidious persuasions, and I was therefore desirous of show-

ing that I could still "roar" effectively. I sent a wagon-load of fossils and diagrams; the room was crowded to the ceiling. Herschel, Brewster, Babbage, Faraday, Murchison, even Lyell and all our best men, were there; and Faraday (who was as kind and attentive to me as ever) said it was the most successful and eloquent discourse ever delivered there: so I made my exit in glory; and I will never lecture there again.

FROM DR. MANTELL.

April 22, 1852.

. . . . . I GAVE four lectures (called a course of geology) to the Mechanics' Institution at Leeds, one of our great clothing-towns, of some 220,000 inhabitants; the greater number being the slaves of our factory lords. I never was in the town before, and never wish to visit it again; the moral and physical atmosphere are alike most depressing. You eat coal, drink coal, respire coal, imbibe coal, sleep in coal, and "live and move, and have your being" in coal; and should you die at Leeds, you will be buried in coal. Nothing but the consideration that the smoke which rendered the atmosphere darker than that of London, and which pervades all things, is the impalpable detritus of the carbonized remains of lepidodendra and sigillaria, and other beautiful trees, rendered my sojourn endurable, even for the week which my engagement compelled. Yet there is a good local museum in the town; and the Philosophical Institution and the Mechanics, must draw large audiences. My lectures were eminently successful; the room being filled to the top gallery. I took my footman with me, who attended to the diagrams, &c.; then I was able to visit my friends at York, and after ten days' absence, I returned home not the worse for the exertion, and with £35 clear of expenses. When lecturing to my miscellaneous but intelligent audiences at Leeds, (many Quakers among them,) I could not but think that if I were preaching in your coun-

try, my hearers would be pretty much of the same character, — attentive and wish-to-be-instructed listeners; not the listless, fashionable attendants which we have in London. . . . . .

FROM DR. MANTELL.

June 22, 1852.

. . . . . PEOPLE are hastening out of town, some for excursions on the Continent, and many to engage in the turmoils of a general election, — an occasion in which Englishmen show their appreciation of the privilege of choosing wise and prudent senators, to conduct the affairs of the nation for the next seven years, by getting drunk and committing all kinds of follies and vices, and selecting the richest booby of a squire, or leading person of property in the district, without the slightest regard to his qualification for the important duties he is supposed to be called upon to perform. I am so disgusted with the cant and hypocrisy of both Whigs and Tories that I should not vote at all. We shall have three or four months of rioting and debauchery; the evil induced in small country towns, is incredibly great. I am hard at work on the new edition of my "Medals"; spending a large sum in additional illustrations; for I cannot allow a work of mine to appear without making it as perfect as my means will admit of. . . . . .

FROM DR. MANTELL.

July 16, 1852.

. . . . . YOU will be pleased to hear that I am elected honorary member of the Royal Academy of Sciences of Holland, and still more, that the Queen (which means the government, — Earl Derby,) has ordered my name to be inscribed among the list of distinguished *savans* deserving reward from the crown, and an annuity of £100 for life is granted me. This came quite unexpectedly, in a most kind letter from the Earl of Rosse, (President of the Royal So-

ciety,) at whose suggestion I believe it was made. Had it been £200 per annum, it would have enabled me to retire to some cheaper locality, and give up my profession. As it is, however, I am very thankful for the distinction. Lord Rosse begged me to understand, that both he and Lord Derby felt reluctance in offering me so small a gratuity; but had they waited till the fund was larger, they might have failed altogether.

FROM DR. MANTELL.*

October 11, 1852.

. . . . . I HAVE of late been suffering more than usual. I have not got from home, save for a day together, since the spring; and now the weather is too cold and damp, so I must grumble on; and should I live till spring, must then make an effort and endeavor to breathe pure air once more. You will perceive by this outline of an *anodonta* from the Wealden of Sussex, what a noble addition we have made to the Naiads of the Iguanodon River. Six or seven specimens have been found on the Sussex coast, near Hastings. Mr. Lea saw our specimen, and said it was a fac-simile of one of your Ohio species. I had a letter from Mr. Lea last week. He had been at the meeting of naturalists at Wiesbaden, and was much delighted with all he saw and heard, and with the reception he met with from the assembled *sayans*. You have put it out of my power to be any longer a disinterested judge of the expediency of publishing your travels; for I will say, in all sincerity, that I should appreciate the kindness and distinction you proffer in the highest degree. But when I did not think of such a kindness on your part, I had, as you know, felt convinced that you ought to publish your observations on men and things in England and the Continent, after an interval of forty years. Such a privilege falls to the lot of but few, and in my opinion ought not to be thrown away. . . . .

* This was the last letter of Dr. Mantell to Professor Silliman. — F.

It was with much regret that I read the affecting notice of the loss you have sustained in your circle of scientific friends. I well remember Professor Kingsley, who quite endeared himself to my sister and me by his social and kind bearing when with us. As for me, I have scarcely an old friend left, — all having gone before me: the happy, the wealthy, the vigorous, many in the prime of manhood, — all are taken away, and my wretched worn-out frame still holds together, — for some wise purpose, doubtless, — and I must work on to the end. May Heaven bless you and yours, my most valued friend, with every good. Love to all.

Ever most affectionately, yours,

G. A. MANTELL.

To this correspondence is added a letter to Professor Silliman, written after the death of Dr. Mantell, by a friend of both.

FROM DR. J. C. WARREN.

January 14, 1853.

MY DEAR SIR, — Accept my best thanks for your very interesting letter. The sudden termination of the sufferings of our friend, Dr. Mantell, we ought to consider not only a wise, but happy dispensation of Providence, for he had so well acted his part as to establish himself in the recollection of his fellow-men, and give us reason to believe that he is enjoying the reward of a good and useful life. Your determination to retire from the more laborious duties so long and successfully performed while your faculties still remain bright, appears to me the more wise, because it is not necessary. Your habits of occupation will always find employment on something agreeable, and I think you have acted most wisely in selecting some one to aid you, in smoothing the cares of life; but as you have not occupation in an active way, you will have enough to gratify you in

the recollection of a long life filled with the most elevated pursuits we are permitted to enjoy in this world. For my part I have got pretty well rid of my laborious and responsible duties, but having no disposition to be idle, I employ myself in such affairs as are pleasant, and at the same time not wholly useless. . . . . Accept my best wishes that you may continue long to enjoy life with your family, and believe me to be,

Very sincerely, your obliged friend,

J. C. WARREN.

CHAPTER XXV.

HIS LAST LECTURE IN COLLEGE: THE TROUBLES IN KANSAS: SLAVERY.

Reception of his *Travels in Europe:* Letter from President Sparks. — His Birthday, (1854). — Conclusion of his College Lectures. — Mr. Gajani. — Death of Friends. — Induction of Mr. Dana into Office. — Professor Silliman's Views on Slavery. — The Meeting in aid of the Kansas Settlers. — Encomium upon Professor Silliman by Senator Foster. — His Letter to the *National Intelligencer.* — Letter from Senator Hale. — Letters from Josiah Quincy. — His Birthday (1856). — Interviews with Washington Irving. — The New Year (1857). — Letter on the Claims of Christianity. — The New Haven Correspondence with Mr. Buchanan. — Vindication of Professor Silliman by Senator Dixon. — Letter from Senator Trumbull. — Letter from Senator Sumner. — Letter to Dr. Hitchcock. — Letters, chiefly on Politics and Slavery, to Mr. John Taylor.

THE welcome accorded to his published volumes of travel, — "A Visit to Europe in 1851," was grateful to his feelings. Some of the letters of commendation which he received, as well as notices by the press, are preserved in the Diary.

President Sparks writes from Cambridge, December 8, 1853: — "Let me thank you most cordially for the volumes which you so kindly ordered to be sent to us. I had scarcely time to open them before I was taken ill. But this I cannot regret, as they have afforded a delightful recreation during the progress of my recovery, within the last few days, especially as Mrs. Sparks has occasionally lent me her voice, and participated in the enjoyment. The work has afforded me the double pleasure of reviewing many agreeable reminiscences, and furnishing me with much in-

teresting instruction, drawn from observations which I have never made, or in countries which I have never visited. I know not a better guide for young travellers, or a work better suited to enlighten those who would gain a knowledge of foreign lands in the quiet repose of their firesides. Where will you go next? You have not yet encompassed the globe, though you have taken long strides, and stood on some of its highest peaks. What think you of the wonderful East, &c.?" *Laus a laudato viro.*

His bodily vigor did not lead him to forget that many additional years of life here were not to be expected.

My Birthday, August 8, 1854.—It is a solemn crisis when an individual has lived seventy-five years in this world! How few are favored with so long a lease of life! How few are permitted to enjoy unimpaired health and mental power at so advanced an age! I am surprised at myself,—almost alarmed, lest I should be lulled into an undue confidence in life. The frequent and warm salutations which I receive, and the strong manifestations of surprise at my appearance as regards vigor and the absence of the decays of age, are adapted to make one put off the fear of death, and indulge in dreams of still longer life. I endeavor to repress this confidence, and to realize that the day is far spent, and that the night of death may be near at hand. The religious views which I have expressed on many of these recurring anniversaries remain unchanged. If I have a hope full of immortality, I trust I shall be willing to put off this mortal coil, whenever God shall call me home. I wait his call, which may be sudden.

On the 13th of June, 1855, he concluded all his courses of lectures in College, and uttered his feelings in the following

Prayer and Thanksgiving. — Thus, O Almighty God, hast Thou led me on in mercy almost to the close of a long life. A volume would not contain an account of the mercies of which I have been the subject through thy blessing on my labors. It was of thy mercy that I was trained by pious parents, and, although deprived of my father when I was hardly eleven years of age, my blessed mother was sustained by Thee, and endued with courage to educate liberally my brother and myself. Thou hast blessed me abundantly, and enabled me to perform the duties of my station successfully, — I hope usefully to my fellow-men, and in some humble measure to thine honor, which, in all my public labors, I have endeavored to sustain, for I have not been ashamed to acknowledge Thee before men. Wilt Thou, O Thou great and glorious God, sustain that dear old Institution in which I have spent my years; give it means adequate to its wants, and to the extension of its usefulness. May its officers and instructors be wise, faithful, and pious men; its pupils virtuous and diligent, and subjects of God's grace; and may it continue to the latest generations a fountain of blessings to this land. For myself, in this evening of my life, may I be every day ready to die, trusting in thy mercy through the Redeemer of men; and if power and opportunity to be useful are still continued to me, may I have a disposition, as well as ability, to honor Thee, and to benefit my fellow-men. For my salvation I depend entirely upon the Redeemer. In the sight of God I have no merits of my own, and feel deeply that if I am saved, it will be of grace and not of works. I have none to offer that are worthy of thine acceptance. And now, my heavenly Father, I implore thy blessing upon my dear children and their children, and upon the faithful and devoted companion whom Thou hast in mercy given me. I implore it, also, for the precious youth who are now about to go into the world. Bless them all in time and eternity, through Christ our Lord and Redeemer.

In the following paragraph reference is made to a young Italian, who was for some time a dear and cherished inmate of his house, was aided by him in various ways, and regarded him with almost filial gratitude.

October, 1855. — My brother left us on Tuesday the 2d. The Faculty party * recurred at our house on Monday evening, October 1st, and my brother was induced to remain to attend it. The night was stormy, with wind and rain; but we had about fifty persons, instead of eighty, who were expected. The evening passed most agreeably, and a high literary entertainment was given, by reading about one hour from Sig. Guglielmo Gajani's MS. work, now in progress, on Italy. It is written beautifully, in good English, needing, however, some friendly criticism, which it is receiving at our hands. Mr. Gajani was introduced to us a year ago; came to this town from New York to pass the hot weeks, and by invitation, came to us four or five weeks ago, and has lived here ever since. We have had much pleasure and satisfaction in his society, and he will proceed to Boston (fully introduced) to give a course of lectures.

Among the obituaries which now become more and more frequent in the Diary, are notices of the venerable Dr. Williston, and of Commodore Morris.

Death of Rev. Payson Williston, D. D. — This venerable gentleman died January 20, 1856. He was graduated in Yale College in 1783. He was, I believe, the oldest surviving graduate of Yale, having been out of College seventy-two years. He was a particular friend of my late brother of the Noyes' branch, and I recollect his person as he was many years ago. His father was the Rev. Noah Williston, was graduated in Yale College in 1757; and was

* A social party consisting of the College Faculty and their families. — F.

minister of the Congregational Church in West Haven. In July, 1779, this gentleman, while leaping a fence to escape from the enemy, fell and broke a leg-bone; but the commander hearing that he was a clergyman treated him well, and ordered a person to set his fractured limb in his own house. My mother was one of his friends, and I remember being hospitably entertained there on a journey with her when I was a youth and in delicate health.

Commodore Charles Morris. — This gentleman was a native of Woodstock, Connecticut, and was much esteemed in the Navy as a brave and able officer. I have seen him several times. He was Captain Hull's first-lieutenant when the *Guerriere* was captured; he was shot through the body. I have been informed that when the frigates were approaching each other, the *Guerriere* began to fire when two miles off. Hull was bearing down upon her before the wind, and as she came near, the balls of the *Guerriere* begun to take effect, but Hull had given orders to reserve fire until he should himself give the order. His men had begun to fall, and the sailors became impatient to return the fire, when Morris, as officer of the gun-deck, went to Hull to ask leave to fire, but the commander replied, — "Not yet Mr. Morris." The men becoming still more impatient, he went again to Hull, who gave him the same reply, until they were within pistol-shot, when he gave the fatal order, — "Now fire in the name of"——

Unexpected honors were paid to Professor Silliman in connection with the opening lecture of his successor, Professor Dana.

February 18, 1856. — Professor James D. Dana, my son-in-law, successor in the department of geology, began his course to-day in the geological room, the scene of my labors on the same subject. The room was full. His lecture was very able and interesting; and, very unexpectedly to me,

he introduced it with a notice of the rise and progress of geology in this country, and my action and influence in bringing it about were set forth in warm and elegant language. I was not indeed aware that he appreciated my efforts and attainments so highly. The Class rose as I entered the room. They had indeed been waiting for my arrival, as I was a few minutes behind time. It is a signal favor that I have lived to see my two extensive departments divided, and, without any influence of mine, my own son charged with chemistry, and my son-in-law with the mineralogy and geology; and I am still in health of body and mind to enjoy this happy result.

Quite unexpectedly to himself, Professor Silliman became involved in the political conflict which preceded the late armed struggle of slavery for dominion in this country. The institution of slavery he had always condemned, and had never hesitated to declare his views respecting it on all proper occasions. His first book of travels contains a warm remonstrance against the continuance of that system of injustice. At that period, and for a long time afterwards, sentiments adverse to slavery were heard almost as frequently in the South as in the North. Professor Silliman had been strongly interested in plans for the voluntary emigration of the released blacks to Africa, and, in common with most good men at the North, had hoped much from the operations of the Colonization Society. In an address on "Some of the Causes of National Anxiety," which he gave in New Haven on the 4th of July, 1832, he discussed elaborately the subject of slavery and colonization. He claimed that the former is "a proper subject of national discussion, and is to be encountered by national efforts;" "that diseased members affect

the entire physical system;" and that we should say to Kentucky, Virginia, and the Carolinas, that slavery, "although it is eminently your curse, is also a great national evil." "Slavery," he affirmed, "is now generally acknowledged, in this country, to be an enormous evil." Alluding to the legislative debates which followed the then recent slave insurrections in the South, he said: "The statesmen of Virginia and Maryland fully proved that slavery is an intolerable evil: bitter to the slave; costly to the proprietor; dangerous to the morals of the youth; as a reliance for national wealth, unprofitable and wasteful; as a means of public defence, worse than useless; a blot on our national honor; a reproach to our moral character; a source of increasing domestic danger; an insult to the purity of our religion; and an outrage on the Majesty of Heaven!" "Having long and anxiously contemplated this subject, I have looked earnestly for the time — which seems now at hand — when the national conscience should be thoroughly awakened to the sin of slavery." He lived to see the enlightened views of those Virginia statesmen repudiated by their children, and slavery defended both as a divine institution and the surest bulwark of Christian civilization! The remainder of his address is mostly devoted to the advocacy of colonization, and of efforts for the intellectual and moral improvement of the emigrant blacks. But it became obvious to all discerning men that African colonization would never remove slavery, or even stay its progress, under the powerful motive afforded by the increased facilities for the culture of cotton, and the great demand for that

product in the markets of the world. Professor Silliman, though never a partisan, had acted with the Whigs, and with them had resisted the further extension of slavery, and the schemes for obtaining new territory on which slavery might plant itself. But he was ardently attached to the union of the States, and was ready to go as far in the path of concession as he could go without the sacrifice of principle or the public welfare. In the hope of appeasing strife, he supported Mr. Webster in his assent to the so-called compromise measures of 1850. He was willing to believe, with that statesman, that the physical character of the country would keep slavery out of the territory of New Mexico; he considered the admission of California a substantial advantage to the cause of freedom; and, much as he disapproved of various features of the Fugitive Slave Law, he believed that some law designed to secure the rendition of slaves was imperatively required by the terms of the Constitution. So far, whether wisely or unwisely, he consented to go. But when, in 1854, the Missouri Compromise of 1820, forever prohibiting slavery in States to be formed north of latitude 36° 30′, — the solemn stipulation on which Missouri, a slave State, had been received into the Union, — was annulled by act of Congress, he felt that further concession to the demands of the South would be thrown away, and that agreements made by the Slave Power were no longer to be trusted. Thenceforward he deemed it his duty to join his fellow-citizens in withstanding every attempt to enhance the already alarming influence of the slave-holding interest in the government of the country.

The opening of the territory of Kansas — a part of the region which had been protected from slavery by the Missouri Compromise — was the signal for a movement in New England and the Northwest, having for its end the settlement of this prospective State. Societies for aiding emigrants were organized in several of the Eastern States. Seeing that, by the influx of these Northern emigrants Kansas was likely to become a Free State, the slave-holding inhabitants of the Missouri border endeavored to prevent this by means of invasion and violence. Passing over into Kansas, they seized the ballot-boxes, and filled them with spurious votes, thereby constituting a territorial legislature which would be willing to execute their behests. While these things were taking place, one of the numerous colonies from the Northern States was organized in New Haven. It was composed of sober and respectable men; and, on the evening prior to their departure, a meeting was held in the North Church, where many of them had worshipped, to bid them farewell. Their leader, who had been a superintendent of the Sunday-school, gave an account of the equipment of the company, by which it appeared that they had been unable to provide themselves with rifles or any other species of fire-arms. It being necessary to supply this want, which existed even if there had been no Missouri invaders to fear, it was proposed that a subscription be made on the spot. At the urgent request of others, Professor Silliman spoke a few words in favor of the proposition. The rifles were contributed by individuals present. This harmless affair, being depicted in blazing colors in some of the news-

papers, caused a wide-spread excitement, and he became an object of indecent vituperation from partisan journals and politicians. We quote from the Diary: —

April 3. — A great clamor has been raised against Mr. Dutton * and myself on account of the rifles. It has been used for electioneering purposes by the administration papers, to influence the approaching election. I care not what they say about me. I feel that I did right. There was danger that the party — more than half of them — would be obliged to go out unarmed, not merely among bears and wolves and panthers, but among murderers and robbers. The invaders of Kansas, from Missouri, have proved their title to both these appellations by murdering three peaceable settlers, robbing many more, and maltreating clergymen and all whom they could bring under their power. A general massacre at Lawrence was undoubtedly prevented by the armed preparation of the people. It matters little that these rifles were obtained in a church; it was a holy cause, and time and place were comparatively unimportant.

The matter was not deemed too insignificant to be brought up in the United States Senate. In the course of a reply to aspersions cast upon the New Haven meeting, Senator Foster of Connecticut, spoke as follows: —

. . . . "Professor Silliman is a man of wide reputation on both sides of the Atlantic. His name is known and honored wherever the light of science shines. There is a daily beauty in his life which commends to our notice and respect the highest characteristics belonging to human nature. No man illustrates, day by day, the courtesies, the

* The late Rev. Dr. Dutton, pastor of the North Church. — F.

amenities, the proprieties, which belong to the character of a gentleman and a Christian more than that man. He has been connected with Yale College, one of the well-heads of science and learning in this country, for more than fifty years, as an instructor. During the time that he has been thus a member of this Institution, more than four thousand young men have received instruction through him and the other members of the Faculty of that Institution, and not one of that large number ever received from him any other than such influences as would do good the world over."

The Diary proceeds thus: —

The week has been fruitful of attacks and reflections on account of the affair at the North Church. . . . . I could have wished that it had occurred differently and with less publicity, and not in a church (although we, the descendants of the Puritans, do not hold such places to be consecrated). Still it is desirable, as far as possible, to exclude secular subjects from them. The "New York Times," through its correspondent here, gave a startling publicity to my name by placing it at the head of the column, as if I had been a leader. I was mute almost to the last moment, and then yielded to an urgent appeal to present the matter to the meeting, and it is said that otherwise the object would not have been accomplished.

April 20. — From the most remote parts of the Union, newspapers and anonymous letters continue to pour in. They are, as I am informed, (for I do not read them,) scurrilous, bitter, and many of them low and vulgar. They give me little concern, and will by and by die out. I have done my duty, and we are cheered by news of the arrival of our New-Haven colony in Kansas, I believe, without molestation. I have addressed a letter to the Hon. John P. Hale, in consequence of his promptly repelling an attack upon me, in the Senate, by Senator Benjamin of Louisiana, many years ago an unworthy member of Yale College.

My letter is intended as a vindication of the New-England emigration to Kansas. I have offered it to the "National Intelligencer" for publication. It was published in that paper, and republished in the "Journal of Commerce," in the "Evening Post," the New Haven "Morning Journal," and "Evening Palladium," and in the "New York Independent"; and it is pronounced in that paper to be "an admirable letter."

An extract from this letter is subjoined.

. . . . . "I am not disposed to apologize for whatever aid I may have contributed by action or influence to arm our emigrant colony, nor am I aware that the extraneous circumstances of time, place, and persons, connected with the occasion, are of any serious importance. They were, at the crisis alluded to, wholly accidental or unexpected; but the exigency admitted not of change or delay, and the thing done was right. It is no evidence of a good cause when extraneous and irrelevant circumstances, of little or no importance, are officially paraded to the neglect or concealment of a real and important issue. The real issue, in the present case, is whether the arming which is conceded to persons emigrating from all other parts of our country, whether going to Kansas to settle or to vote, should be denied to the emigrants from New England. May they not also carry arms and munitions and all other supplies and defences necessary to the settlement of a new country on the very frontiers of civilization, and one of its most extreme outposts? Can any issue be more simple or more reasonable? Who can give any other answer than that which is now being practically given by the voluntary action of many thousands, moving from the most remote points of our vast country, to possess the promised land? The arts of designing men, and the intemperate zeal of those who have viewed the subject through a false medium, have fostered prejudices and produced recriminations which

are unfavorable to a candid and patriotic consideration of this subject. The wise and the good in the South and the Southwest (and I have known many such) will, when the present feverish excitement has died away, come to view this matter right, and we must patiently wait for that most desirable result."

His vindication of himself satisfied reasonable men.

Saturday, May 3. — My Kansas letter meets with great approbation, as I learn from many sources; but I have not heard whether it has been attacked by the slavery prints. It is approved by G. Griswold, Joseph E. Worcester, and many more. The Hon. John P. Hale, to whom it was addressed, has written me a private letter of warm approbation. I continue to receive vituperative newspapers and letters. The latter are generally very illiterate and vulgar. I hand them over to Mrs. S., who reads and reports to me.

FROM HON. JOHN P. HALE.

WASHINGTON, *May* 3, 1856.

MY DEAR SIR, —Your very acceptable letter of the 16th ult., accompanying a letter to the editors of the "National Intelligencer," was duly received, and your request to have your letter inserted in that paper, was communicated to its editors, and very promptly acceded to by them. I use not the language of flattery when I say to you, that the friends of freedom in Kansas, in this city, were highly gratified by the bold and frank vindication of the measures adopted by the emigrants and their friends at New Haven, under your name in the columns of that paper. If we cannot maintain liberty in Kansas, though I never will despair while I believe God sits on his eternal throne, yet so far as human foresight can penetrate the future, I see nothing before this country but the establishing, perpetuating, and increasing of the domination of the slave-power. Our affairs in Central America are becoming very embarrassing. The fact just

brought to light, that the British government have agreed to furnish two thousand arms to Costa Rica, will be seized upon to stir up the jealousy of our people against British interference; the worst passions will be appealed to, and I see nothing to prevent "manifest destiny" from annexing Central America to the United States, and when that is done, Mexico must follow. Now suppose these events to come, and allow the principle to be established, now openly and boldly contended for, that the United States Constitution carries slavery with it, or rather the right to hold slaves, wherever it has authority, who does not see that the destiny we are to unfold and develop is to subdue the semi-barbarous nations occupying that portion of this continent south of us, strike down the liberty which they have inaugurated, and make the confines of slavery coextensive with our conquest. Do you ask, or rather does any one ask, What has the Kansas question to do with this? I answer, everything. Make Kansas free; let it be understood that in every new acquisition, liberty and not slavery is the boon which we bestow on conquered provinces and nations; and the aliment which feeds this lust of conquest, and upon which it subsists, and without which it would die, is taken away. I feel as if we could hardly overestimate the magnitude of this question and its consequences. With many thanks for your name, so generously given to the struggling friends of the cause, and especially with my personal thanks for the honor you did me in making me the organ of your communication,

I am, with the highest respect;
Your obliged friend,
JOHN P. HALE.

In his love of liberty, Professor Silliman enjoyed the sympathy of another old man in whom the fire of youth had not been damped, and who like him was a witness for human rights to the end.

FROM HON. JOSIAH QUINCY (SENIOR.)

Professor Silliman: —

My dear Sir, — I am obliged by the interest you express in my recent exertion.* *Laudari a laudato viro*, is Cicero's standard of exalted praise. I calculate little in party times on the effect of any independent endeavor. Those whose interest it crosses condemn or let it pass in silence if it be too true to be censured. Those whose views it supports are apprehensive of being identified with truths, which are not exactly coincident with party platforms, however much they may approve them. Men are governed by their interests, and care little about principles. I have, however, but little to complain of, rather nothing. The work has been better received than I expected. Babes do not like strong meat. Diana of the Ephesians is said to be in danger from my doctrines, and all who live by making silver shrines for her temple cry out that the craft by which they live will be destroyed. As to its being "thrown broadcast through the land," that must depend upon others, but though the *spirit* of some be willing the *flesh* of many is weak. I have done in this respect, and shall do, my duty. But from age and from having been for more than thirty years disconnected with politics, I almost stand alone. My contemporaries are gone, and beyond the sphere of my own state, my acquaintance is very limited. Besides giving a thousand copies gratuitously to the public, I have reserved a number for my own distribution, and a second edition, I am told, will be required. If you who have been spreading the light of philosophy through distant regions and must know many, of whom I know nothing, and to whom the work would be acceptable, will send me a list of such persons with their address, I will see them supplied. Your interest in the thing, so fully expressed, seems to justify me in giving you this trouble if you see fit to take it. I remember Senator

* A pamphlet on the side of freedom. — F.

Tracy with interest and great respect. His wit was ever ready and racy. His judgment exact. His spirit elevated and true. Few of my political contemporaries have left a deeper or stronger impression on my memory and heart.

With respectful remembrance of your son, to whom I desire you to present me,

I am, truly and respectfully, yours,

QUINCY, *August*, 1856. JOSIAH QUINCY.

P. S. — If a few copies will be acceptable to you, I will send them by express. In plain truth, I am desirous to give the work as much publicity as I can. Not from vanity. Heaven forbid! What is vanity or praise to a man of *eighty-five*? But I think it calculated to do good, and hope it will.

The following note, of a later date, from the same veteran patriot, is too characteristic to be omitted: —

FROM HON. JOSIAH QUINCY (SENIOR).

Professor Silliman: —

DEAR SIR, — I thank you for the interest you express in your letter of the 16th ult., on account of my late accident, and you ask me to ask my daughter to give you the state of my health. It is my rule never to cast labor on another which I am able myself to perform. The accident was severe, laying open a deep wound of six or eight inches in my skull, — half cut, half bruised. It shook a little the economy of my brain, and has kept me above ten days a little cautious of putting it to any but moderate use. I have great reason for thankfulness. The newspaper account was exaggerated. They want exciting paragraphs, and exaggerate for dramatic effect. Be assured that I am in every respect in my usual health, and always

Truly yours,

BOSTON, *November* 18, 1858. JOSIAH QUINCY.

The return of his birthday (August 8, 1856,) was marked, as usual, by reflections in his Diary.

August 8. — Again my birthday has returned; it has pleased God to permit me to finish my seventy-seventh year. I have lived beyond the allotted age of man, not merely threescore years and ten, but threescore years and seventeen, — and my only brother, the only one I ever had of the whole blood, should he live to October 26, will then enter his eightieth year. May God grant that our lives, protected to old age, may for the remaining time be devoted to the wisest and best purposes. It may be written concerning me, — "This year shalt thou die." As yet I have no admonition from physical infirmities. My health and strength and power of endurance, and of performance of duty, are undiminished, — may God be praised, — and my eye is not dim; I am writing this page without glasses. My appetite is very good, and my sleep quiet, much better than in former years. As physical causes, I impute much to cold water faithfully applied every morning over the entire surface, and followed by vigorous friction. I have for thirty-three years drunk only water, tea, and milk, — rarely coffee. My food is the same with that of other people. This healthful physical condition favors cheerfulness of temper, which is natural to me, and I hope I have a willing confidence in God, my Creator, my Saviour and Sanctifier, that He is preparing me for the exchange of worlds.

A visit to friends on the Hudson brought him into intercourse with Mr. Irving.

August 19, 1856. — In the evening we enjoyed a rich treat in a free conversation with Mr. Washington Irving, who, by invitation of Mr. Thomas, came to see me. The next morning we returned the call, and found him at his beautiful villa of Sunnyside, upon the bank of the river,

and just by the railroad, and yet screened from view by groves. The house is a gem, in perfect accordance with the refined taste of its accomplished possessor. He is still engaged upon the history of Washington, and a fourth volume is nearly ready for the press. It had been in my power to contribute some interesting things, particularly the journal of the late Governor Trumbull, of the siege of Yorktown, — he being private secretary to the Commander-in-Chief, General Washington ; and I suppose he will make use of some portions of it in his forthcoming volume.

August 20, *Wednesday. Mr. Irving.* — This distinguished gentleman, one of the bright stars of our literary hemisphere, came from his home, a mile from this place, and passed a long evening with us ; and we had half an hour or more with him, as I have mentioned, at his own house. In person he is not tall ; probably he may be five feet six or seven inches high ; his form rather round and full, but not corpulent ; his countenance florid and slightly bronzed ; his lips thick ; his eyes blue or gray ; his expression mild and benignant, with a slight tinge of mirthfulness ; his air modest, with even a shade of diffidence ; his voice is not clear, but rather husky, as if catarrhal ; his conversation is animated and engaging, and he appears quite as willing to hear as to speak. Having had some correspondence with him regarding his "Life of Washington," we were naturally drawn nearer together on that account ; and he conversed with freedom and ease respecting his work.

Proceeding to Albany, where he was the guest of his esteemed friend, Dr. Sprague, he attended the inauguration of the Dudley Observatory, and listened to the address of Mr. Edward Everett.

This gentleman spoke two hours in his own magnificent style, and the audience was delighted. His subject was

the importance and use of astronomy. As the oration is in print, I shall not attempt any analysis of it. It was every way worthy of its author and of the sublime subject. Twilight was closing in upon us when he finished, and the Albanians enjoyed a triumph. Mr. Everett lodged with us at Dr. Sprague's, and, as he remained over one day, we enjoyed highly his conversational powers, and his rich communications regarding men and things, with which and whom he had been so extensively conversant, at home and abroad. His manners are amiable, kind, and winning, and do not justify the impression that he is cold and reserved.

Professor Silliman supported Colonel Fremont for the Presidency. The result of the autumn elections, notwithstanding the strong rally of the Republican party, occasioned him much anxiety.

November 19.—Pennsylvania and New Jersey have gone for Buchanan, and thus it is feared that the slave-power is installed in all the branches of the government. There has been much fraudulent voting on the side of Buchanan. Many thousands of Irish, and not a few Germans, have been at the command of the slave-party. But a still more important cause of defeat has been, that the late President Fillmore has been in the field by his own consent. It was ill-judged in him and his friends, and has only tended to defeat Fremont, because it was obviously impossible that he — Fillmore — should be elected by the popular vote, and very many of the votes given for him would, if he had not been in the field, have been given for Fremont. In the election of members of the House of Representatives, also, the Republican cause has lost many members. The Government, after March 4, will be entirely in the hands of the slave-power. This affects me much; but what is most afflicting is, that Kansas may be left to the mercy of

wicked men, whose course has been marked hitherto by murder, conflagration, robbery, and oppression.

The following passage affords a glimpse of his occupations at the close of this year.

December 14. — I have been too busy since Thanksgiving to continue my record. The answering of letters occupied me about a week; and during the last two weeks I have been employed most of the time in rewriting two lectures, — one on water and its relations; and another on fire and its relations, especially to the phenomena of the earth. These two I have finished, with full heads. A third I am to write this week (D.V.), on the combined results of water and fire upon the economy and habitability of our globe. I have undertaken this labor with reference to the Young Men's Christian Union at Buffalo, who have pressed me urgently to give them some lectures; and, although reluctantly, — in part, on account of the season of the year, — I have consented to go.

The opening of the new year (1857) leads him to a grateful review of his situation in life.

January 4, 1857. — I am surrounded by mercies innumerable as they are undeserved. My external circumstances are entirely comfortable, and even moderately prosperous; my health and activity are preserved; and I cannot perceive any failure in my mind. But there must be an end of this life, and it is the subject of my daily prayers that I may be prepared for the change of death, and for the recompense of reward. I do not pray for an increase of worldly good. I have enough of external good, for which, in all its multiplied forms, I render daily thanks to God. But the prayer which I do most frequently and most urgently offer, is for a holy heart, holy affections, and a holy life, and that I may, by the constant increase of these proofs, find

reason to hope that it may be well with me when I die. I place no reliance whatever upon my imperfect performances of duty, as a ground of justification with God. I rely solely and entirely upon His mercy, through the great sacrifice of my blessed Lord and divine Saviour, Jesus Christ. . . . . I have not that assured hope and that fulness of joy which many more favored Christians possess; but if I should die this year, I have an encouraging hope that my Creator will accept me, unworthy as I am.

The concern which Professor Silliman took in the welfare of all his friends led him to active efforts — where such efforts appeared to be warranted by any hope of success — to promote their religious good. Among these friends was a scientific man of deservedly high reputation in his department of study, but sceptical in respect to the claims of Christianity, and who had lately adopted the tenets of "Spiritualism." To him, Professor Silliman addressed an earnest letter on the subject of religion, a copy of which is preserved in the diary.

My dear ——, In return for your present at Albany, I request you to accept, as a proof of my kind regard and good-will, a small volume, entitled, "The Christ of History." It goes to you by the mail which conveys this letter. As I have perused with respectful attention your work on Spiritualism, I ask that you will in turn read this little book, which presents a view of the Saviour, to my mind both original and convincing. Four historians, writing without consent and independently of each other, concur in presenting a character of celestial elevation and goodness, — such a character as has never been presented before or since in human history, nor conceived of by the mind of man. The narrative of his life, his acts, his teachings, his example, his death, and his resurrection, proves

his divinity, — divinity associated with humanity, that thus he might be our brother in sympathy, both in joy and sorrow, — a union incomprehensible to our finite minds, but not more so than that of our immortal souls with our mortal bodies. The little volume which I now send you comprises, as you are aware, but a small portion of the copious evidence which supports the divine origin of the Scriptures. The Old Testament, marked by the peculiarities of the ages and countries which it commemorates, with occasional openings into the future world, holds out in prominent relief the interests of the present world; while the New Testament, in accordance with the prophecies in the Old Testament, brings life and immortality fully to light through the Saviour. Had your course of research been as fully devoted to these subjects as it has been to physical science, I trust you would not have been an unbeliever; and it is even now not too late to ascertain whether the Bible is really, as you intimate, a cunningly, or even a clumsily, devised fable. Should you, to say no more, view the "Christ of History" as I do, you may have occasion to review the position you have taken, which appears to me full of danger. I must confess that I closed your volume with very painful emotions, and my mind has anxiously balanced between the duty which it seemed to me I owed to my early and constant friend, and my despondency as to my power to produce any salutary effect upon his mind. At last, after much consideration, I have concluded to address to you a few remarks, in a spirit of perfect kindness and affectionate interest, but of deep and anxious concern. . . . . My dear ——, I cannot desert my Saviour, — him who spoke as never man spake, while he knew what was in man; who has paid my debt when I was bankrupt; and who sustained in my stead the penalties of a violated law; — I cannot desert him, and repose my confidence in the visions of so-called mediums. You and I are now old men, and the time is not remote — it may be very near — when

we shall pass into the real world of spirits, into the presence of God, and, as millions believe with me, into the presence of the holy angels, and of the Saviour, and of the countless host of the spirits whom He has redeemed. You may remember that, at an early period, we conversed much and freely on the Christian faith; but, as we did not agree, and as I saw no hope of convincing you, while you, with a spirit of candor and kindness, appeared not to wish to invalidate my belief, we tacitly dropped the subject. But, during more than half a century, we have maintained a friendly communion on matters of science, a warm personal friendship, with a frequent interchange of offices of kindness. I was unwilling quite to relinquish the hope that you would eventually become a believer in divine revelation, especially as a happy domestic influence on the part of one who, through many years, has worthily possessed your confidence, respect, and love, leaned altogether in the right direction. Your course as a man of science has been honorable, and duly and justly honored by your country and in other lands; while I, as your friend, have not been slow to proclaim your merits and vindicate your claims. It would have been happy if your public career had ended with science. . . . . You will be hurt — I fear you will be offended — by my plainness; but when you realize that this is the strongest proof I have ever given you of that friendship which you yourself have valued, and which has been coextensive with our acquaintance, and almost with our lives, you will then perceive that these are indeed the faithful wounds of a friend. As one of your oldest and most faithful surviving friends, with a spirit grieved but not alienated, with hope depressed but not in despair, I have now relieved my mind from a painful sense of responsibility. I stand acquitted to my own conscience, to you and to God; and I earnestly pray now, as heretofore, that, under a divine influence, you may see the spiritual world, as I think I see it, through a divine revelation,

commensurate with time and reaching through eternity. I will still hope that you may seek and find salvation through the Redeemer, and that through his intercession we may rejoice together in acceptance at the great day before the throne of God, our sins and follies being mercifully forgiven. Pardon me if, in my honest zeal for your welfare in both worlds, I have transcended the limits of that kindness and courtesy which we have always maintained towards each other, and I beg you to accept this letter as a proof that I am still, as ever,

Your faithful friend,

B. SILLIMAN.

P. S., June 6. — This letter has lain by me for some weeks, partly because I could not, until yesterday, obtain a copy of "The Christ of History," and partly that I might not hastily, and without due consideration, approach you. On reperusal, I do not find cause to suppress or alter what I have written; nor do I wish to draw you into an argument or a vindication. The letter is intended as a friendly protest; pray, when you have read it, lay it by for a few days, and then read it again with a cool and unexcited mind. I do not ask a reply. I am content that I have relieved my own mind by appealing to yours in a spirit of candor and kindness. Before I seal the envelope, allow me to mention a fact which appears to me not inappropriate. Last week I went with Mrs. Silliman one hundred miles, to Woodstock, Conn., to visit her venerable father, John McClellan, Esq., uncle of the late Dr. McClellan of Philadelphia, — a lawyer by profession, now some months over ninety years of age, but for seven years confined by the paralysis of one limb and arm, — cheerful, however, and affectionate, and with an active mind, still sound and discerning. One morning, while we were there, as he closed his Bible, he said: "I have read it all through during the past and current year," and at that moment he fin-

ished it, and this with only one eye which is useful. Now this venerable gentleman, just on the verge of eternity, finds in the Bible the rod and the staff, which will no doubt conduct him fearlessly through the dark valley of the shadow of death, to fairer worlds on high.

Once more, and this time, also, without any expectation on his part, the name of Professor Silliman was conspicuously brought forward in connection with politics. The Missouri invaders of Kansas had framed a constitution in which were incorporated more hideous features than are to be found in any political instrument of recent times; they had elected their legislature under it, and enacted an inhuman code of laws with the design to perpetuate slavery and drive out or exterminate the freedom-loving settlers. These in self-defence had met and had organized a frame of government for which they did not despair of obtaining the sanction of Congress. The administration of Mr. Buchanan, however, was determined to sustain the government set up by the "border ruffians," and to treat the actual settlers as rebels against lawful authority; and the military forces were employed to carry out this monstrous injustice. Professor Silliman was one of the signers of a remonstrance addressed to President Buchanan from Connecticut. To this paper, Mr. Buchanan published an extended reply, professing that on coming into office, he had "found the government of Kansas," — that is, the government of the invaders of Kansas, — "as well established as that of any other territory," and endeavoring to shirk all responsibility for the origin and character of that government. The letter was written in a tone of injured innocence. It

contained false aspersions upon the great majority of the actual inhabitants of Kansas, whom it stigmatized as lawless and seditious people. It also contained a fling at the Hartford Convention, although some of the signers of the memorial were old enough to remember that in the days of the Hartford Convention, Mr. Buchanan was himself a federalist. How the right of the South to carry slavery into the territories could ever have been doubted, the letter declared "a mystery"! Both the acts of this magistrate in respect to Kansas, and the manner in which he defended them, moved the indignation of Professor Silliman. And who, at this distance of time, can read the history of the efforts made to force slavery upon an unwilling people, without mingled indignation and shame, that such a chapter should deface our national annals?

The annexed extracts are from the Diary.

Buchanan. — In July, a brief but pointed and respectful remonstrance was signed by forty-three gentlemen of New Haven, and a few from other parts of Connecticut, and forwarded to President Buchanan, the object being to protest against the employment of troops of the United States, in order to enforce against the people of Kansas, the cruel and wicked code of laws inflicted upon them by an invasion from Missouri, creating a false and unauthorized legislature. After some weeks the President replied in a smooth, plausible letter, written as a text for his party, and as an offering for the South; but he entirely evaded the point at issue, and at the same time avowed the most ultra pro-slavery doctrines. Several weeks more elapsed; meetings were held by many of the signers, and several replies to the President were written, — one by Rev. Dr. Leonard Bacon, another by Alex. C. Twining, Esq., (the author of the protest,)

and a third by Rev. Dr. N. W. Taylor. The latter was adopted and published here, as the President had published his letter at Washington. The reply of Dr. Taylor was long, but it was conclusive. It annihilated the President's argument. It was extensively republished, and by three of the principal Washington papers,— the "Intelligencer," the "Republic," and the "Union" itself. The reply is regarded by our friends as entirely satisfactory, and is answered by the administration papers only by scoffs, sneers, and personalities. . . . . I am not the author of the letter, but I signed it among forty-three others, and my name is near the end. Still their papers call it the "Silliman Letter" to President Buchanan, and I am everywhere treated as the author of the movement, and the signers are spoken of as professors and clergymen, although very few were of that profession, — but no matter; it is of no importance to me, and does me no harm. The protest has done good in drawing out the President and his administration from concealment, and producing an open avowal of their pro-slavery views and plans.

The Connecticut memorialists (most of whom were of New Haven) were assailed with virulence in the Senate of the United States. A correspondent of the "New York Tribune," under date of February 11, 1858, thus characterizes the reply of one of the Connecticut senators: —

Senator Dixon delivered in the Senate, the other day, one of the best speeches upon the Kansas question, which has been made since Congress came together. He examined the famous Silliman letter to the President, and in the course of his remarks eulogized Professor Silliman in the following happy manner: "And now, sir, who is Benjamin Silliman, that he should be assailed by name in the government organs, as if he were not entitled to address a respect-

ful message of expostulation, or, if there were need, of reproof, to the President of the United States? One of the great lights of modern science, — known, celebrated, distinguished among the few who have adorned the arts, and shed new light on the studies most cultivated by civilized man; the peer, the friend of Humboldt, of Davy (while he yet lived,) of Arago, of Agassiz, of Chevreul, of Cotta, of De la Beche, of Jean Baptist Dumas, of Faraday, of Le Verrier, of Brongniart, of every great contemporary name made illustrious by devotion to science, — known all over the world, — known where many of our distinguished countrymen are still unknown; the honored instructor of three generations of young men, in that far-famed University, beneath whose classic shades he is passing his last days; the guide, the philosopher, the friend, whose teachings and whose counsels have been enjoyed by more of our public men than those of any man now living; the honored Professor at whose feet your own Calhoun sat for many years, when he, a young man, went to New England, as the young men of Rome went to Greece to learn philosophy. There, sir, under the instructions of Silliman and Dwight and Kingsley, his great intellect was cultivated, adorned, and strengthened. There he learned to wield that invincible logic which enabled him successfully to encounter the giants of those days, — the Websters, the Clays, the Bentons, in the Senate, with constant victory; or if not with victory, without ever having been compelled to acknowledge defeat. I know not, sir, how many members of this body were trained by the same men or their successors. . . . But this with deference I say, that whatever honors may be in store for any member of this body; whatever just claims to undying fame, the talents, the acquirements, the eloquence, the public services of the most distinguished here may give him, there is not one among these honored Senators who may not deem himself satisfied, all the hopes of his youth more than fulfilled, all the labors of his manhood

more than rewarded, if he may finally reach the measure of fame enjoyed in his ripened years, by Benjamin Silliman. No office could elevate him; no honors could extend his reputation; no added celebrity could make his name familiar, where it is not now known among civilized men. It is inscribed in the immortal records of learning, and can never be forgotten till the knowledge of humanizing arts and sciences shall fade from the memory of mankind."

Some time before the victory of the settlers of Kansas was assured, it began to be foreseen that the iniquitous measures designed to rob them of their rights, would prove abortive.

FROM HON. LYMAN TRUMBULL.

WASHINGTON, *December* 28, 1857.

. . . . . THE truth is, that since the announcement that slavery exists in the territories under the Constitution, and that slavery is recognized and protected everywhere by that instrument, the adherents of the party in the North saw it was bound to go down, and Judge Douglas is making haste to escape from the sinking ship. I trust the people of Kansas, down-trodden and oppressed for nearly three years, may soon be able to assert their just rights. In order that slavery might be introduced among them, the people of that territory have been subjugated to a military despotism ever since its organization; but thank God for the prospect that the rule of Border ruffians will soon be over. . . . . .

FROM HON. CHARLES SUMNER.

PHILADELPHIA, *April* 28, 1858.

MY DEAR SIR, — A relapse in my calamitous illness which left me for a while quite feeble, must be my apology for not sooner acknowledging the favor of your letter. I am happy in your sympathy, and feel that our good cause is stronger because it has your support.

The present state of things cannot last. Such disgraceful tyranny, supported by such disgraceful corruption, falsehood, and baseness, must topple down; I am sure of it.

There are many signs which indicate that we are on the eve of great events. My earnest hope is for strength to take part in the struggle. Pain and weakness are hard to bear; but harder still is the estrangement from duties which I have at heart, rendered necessary by the state of my health.

Accept my thanks for your kindness, and believe me, my dear sir,

With great respect,
Faithfully yours,
CHARLES SUMNER.

TO DR. EDWARD HITCHCOCK.

NEW HAVEN, *March* 8, 1858.

. . . . . I AM not a little pleased that I was, as I believe, and as you have said, the first person who responsibly recognized the correctness of your conclusions regarding the foot-tracks in the rocks of the Connecticut River valley, as Buckland was the first in Europe. . . . . You mention Senator Dixon's remarks. Of course they were gratifying to me who have been twice on trial before that *august* body,—the Senate of the United States,—and twice zealously defended; in the affair of the rifles, by our Senator, Mr. Foster, and in that of the letter to Buchanan by Mr. Dixon. . . . . We have godless men now at the head of our affairs. May God preserve us from the results of their machinations! The President and his abettors seem to me to have no fear of God before their eyes, nor any proper love of man. . . . . You often remind me of Richard Baxter, living in an age when wicked men bore sway,—always feeling infirmity of body, but with untiring industry and fidelity accomplishing more labor, and bringing out finer results, than most of your

contemporaries. May you long live to prove that physical infirmity is not inconsistent with great mental efficiency!

In this place, it is proper to introduce passages from Professor Silliman's letters to Mr. John Taylor of Liverpool. This gentleman was an enemy of the slave-trade and of slavery; and these letters, though not confined to this topic, give energetic expression to the feelings with which Professor Silliman had beheld the encroachments of slavery in this country during several years.

TO MR. JOHN TAYLOR.

NEW HAVEN, *September* 19, 1854.

. . . . . WHAT a contrast does your review of the epochs you have named, covering more than sixty years, present to us of blasted hopes and despotism triumphant both in royal and republican garb. The interesting but painful sketch which you have drawn of affairs at home, and prospects abroad, I have surveyed with solemn foreboding. The wars in which England has often, during one thousand years, been engaged, have produced burdens which are grievous to be borne. Cowper says, that war is a game at which kings would not play if people were wise; but how shall the people have a chance to show their wisdom? For continental Europe I see little prospect of amelioration, — certainly not without revolution, and as long as millions of bayonets are bristling over their heads the people cannot move. *You* have substantial liberty, but you need more reform, and a reduction of expenses to relieve your people from taxation, and especially in the form of the odious income tax. Thanks to you for your vivid reminiscence of the ancient renown of your national Greys. Even Napoleon, you will remember, at the Battle of Waterloo, expressed his admiration on seeing the Scotch Greys, having

first inquired the name of that splendid corps of cavalry. It is in my mind that at one time the dragoons were all communicants in the National Church. Do you remember the fact, and when it was? Of my own country I have now nothing to boast. The sway exercised by the Slave States, through the recreancy and corruption of venal men from the Free States, has produced the disgraceful condition in which we now are. It is true, however, that a deep feeling of injury and danger now swells the bosom of the North and the Free States in the West, and the result is appearing in our elections. I hope, however, but with fear. The people in the Free States are busy with their private concerns, and are not like the slaveholders, united by a common bond, — nor like them are they prepared to act in concert, marching to the battle with a serried front, and hardly missing a straggler from their ranks. I am impressed with the belief that the wanton and wicked destruction of the Missouri Compromise, — unless their steps should be retraced at the next session of Congress, — will do away with all other compromises, and that fugitive slaves will not hereafter be reclaimed in most of the Northern States. It is remarkable that the slaveholders, who are so fond of quoting the Jewish books for the palliation, or, as they claim, justification of slavery, seem never to have heard the following two verses: Deuteronomy, chap. xxiii., verses 15 and 16, — "Thou shalt not deliver unto his master the servant which is escaped from his master unto thee: he shall dwell with thee, *even* among you in that place which he shall choose in one of thy gates, where it liketh him best: thou shalt not oppress him." If they would be consistent, this does away entirely with the fugitive slave-law. . . . . .

TO MR. JOHN TAYLOR.

NEW HAVEN, *February* 7, 1855.

. . . . . I HAVE never seen the correspondence of C. J. Fox, and the comments of Lord John Russell. However dazzling the popularity of men may be while they are garnished and gilded by fame, they generally obtain their deserts after death; and if posterity do not, in Egyptian form, pass judgment upon them, they do it in effect. . . . . I once heard Fox speak in the House of Commons, and most of the great men you have named were there that night and took part in the debate. In my late visit I found most of those great men in Westminster Abbey! *Sic transit!* . . . . In this country, also, the great struggle between despotism and freedom is going on. The slave-power, elated and bold on account of the repeal of the Missouri Compromise last winter, now avows designs of the most audacious character, — even the renewal of the slave-trade from Africa. But the spirit of the North is raised; and, unless our domestic traitors, of whom we have too many, should betray us, I trust that we shall set bounds to the aggression. The recent election of Mr. Seward, the eminent Senator from New York, to the United States Senate for six years, from March, 1855, is a test victory for that State, — truly the Empire State; and in the next Congress the House of Representatives will be decidedly anti-slavery. . . . .

TO MR. JOHN TAYLOR.

NEW HAVEN, *July* 23, 1855.

. . . . . THE slave aristocracy are now banded together to extend the slave system and its political sway over all our new territories, and over all that may be hereafter acquired, and they avow the determination to perpetuate the system, and boldly claim for it a divine origin, — the sanction of all ages, — the prerogative even of benevolence, and of being necessary to liberty, and especially to a

republican system. The free States can stop the progress of the deluge, if they will; but there are so many venal men among us, and there are so many interests which you have so well pointed out, that are allied to the support of slavery, that I look forward to the future with deep anxiety. The subject cannot, however, rest; the nation is fast arranging its people under two banners,— that of freedom and that of slavery. I feel humbled and mortified for my country, and can only hope that there is a Providence in this case that may lead to happier results than we can now foresee. One of those results is dawning upon the world in the establishment, on the coast of Africa, of enlightened Christian communities of colored people, trained in the habits of order and submission to law, and prompted to industry by having its rewards secured to those by whom they are earned. Like you, I am full of anxiety as to the prospects of nations. I fully agree with you in all that you say regarding that infamous usurper, and the consequences of his influence in the present crisis. Surely the queenly hand was polluted when it touched that of one polluted by so many crimes. Waterloo was avenged, not in battle indeed, but in the degradation of the English monarchy in adopting such a profligate. The only consolation seems to be that these two noble nations have emerged from centuries of bloody hostility, — not, indeed, to shed each other's blood again, but to pour out the blood of both in the crimsoned Crimea, in opposition to a nation nominally Christian, and in support of one bearing an indomitable hostility to the Christian name and institutions. . . . . .

TO MR. JOHN TAYLOR.

NEW HAVEN, *November* 15, 1856.

. . . . . BY this time you have heard that the slave aristocracy have elected Mr. Buchanan. Our defeat was occasioned by a great amount of fraudulent voting, chiefly by

ignorant Irish and Germans; but more still, and principally, by the very injudicious decision of the friends of Mr. Fillmore to run him on the course, and by his still more injudicious consent to stand. It was easy to foresee that, while his election by the people was impossible, it was very probable that he would draw off so many votes from Fremont as to defeat him, — and such has been the result; while Buchanan comes in by a decided minority of popular votes. . . . . There is no depression of spirits in the Republican party. The people of all the Free States, excepting four, have given such vast majorities as to afford a strong assurance that another Olympiad will place the Free States in the ascendant. There is very little exultation in the victorious party; and Mr. Buchanan will have no very enviable position, with a multitude of retainers to gratify; with the heavy pressure of the slave interest upon him; and a powerful and increasing opposition. I do not know him personally; he is said to be a mild man, and some predict that he will seek credit by doing well: *sed timeo Danaos et dona ferentes:* It is very possible that the result which you predict may come, and I should much prefer it to having slavery nationalized and the slave-trade (foreign African) revived, which is now loudly demanded by many Southern presses. But we must not forget that you and I may not live to see the result of the conflict now sustained between freedom and slavery, and your wise and devout reference to the overruling providence of God, is very timely, and meets my cordial assent; and here, at least for the present, I will leave this painful and agitating subject. . . . . .

TO MR. JOHN TAYLOR.

NEW HAVEN, *December* 27, 1856.

. . . . . THE strong interest which you always manifest in the welfare of this country, will demand that I say something of the present posture of affairs. It is not regarded

as desperate; on the contrary, the friends of liberty appear more determined than ever. Mr. Webster, several years ago, warned the South to beware how they roused the Northern conscience. It is now aroused, and, I believe, will not sleep again. The spirit of slavery has appeared so aggressive, insulting, and cruel, that no measures can be kept with it. It must be kept where it is; and the great struggle is maintained, with more decision than ever, to protect Kansas. We have not sent in armies, but we have clothed the naked and fed the hungry. Many hundreds of boxes and barrels of clothing have been forwarded, chiefly by the benevolent exertions of our women, and to a great extent by the work of their hands; while men, both individuals and associations, have contributed large sums of money to purchase food.* It was a part of the policy of the savage invaders to prevent cultivation and to destroy every resource, so that the free settlers might either perish from want, — their houses having been burned and property plundered, — or be compelled, as many have been, to leave the territory. The Southern ruffians have chiefly gone south, and some bands of them to join Walker in his piratical enterprise against an unoffending people. The new Governor of Kansas, Geary, has sent the Missourians home, and has procured the dismissal of the infamous Judge Lecompte, surnamed Jeffries, and his minions. In the meantime, even now, in winter, emigrants from the Free States are going into Kansas, and many thousands more, we are assured, will follow early in the spring; and not a few of the pro-slavery men become converts to freedom when they have planted themselves in the territory. In the meantime, the deep-toned underswell of servile insurrection, growing out of the discussions regard-

* The Vermont government have given $20,000; the *New York Tribune* has collected $20,000 more; the Boston Boot and Shoe Makers $20,000 more; and many smaller sums in hundreds as well as thousands have been forwarded.

ing liberty and slavery, which have reached the ears of the Africans, has arrested the wicked project for the revival of the slave-trade, and the apprehensions excited on the plantations and in the cities will probably discourage Southern emigration to Kansas. This terror *from the Almighty* appears to have thrown back the spirit of slavery upon its own guilty conscience; and it is obvious, from the powerful assaults made upon it in Congress, that the slavery men, with a bad cause and a bad conscience, evidently quail before the manly attacks of the men who have God and the right on their side. The confidence is strong that Kansas will yet be a Free State, and that the aggressions of slavery will find a Northern barrier which they cannot pass; but much remains yet to be done, and I trust that the friends of freedom will not falter in this great conflict.

Your ideas as to the designs of the South comprehending both continents, I have no doubt are well-founded.

As to the policy of our new President, we can form no satisfactory opinion, and it would be idle to repeat the speculations of the prints both at home and abroad. . . . .

TO MR. JOHN TAYLOR.

NEW HAVEN, *March* 26, 1857.

. . . . I HAVE already hinted that we have gained nothing in this country by the change of administration. The slave-power has now engrossed every branch of the government, and their plans, evidently matured and skilfully arranged, are now being developed in an alarming form. Last of all, the Supreme Court of the United States, formerly our palladium, and unpolluted by party influence, has now lent itself as the instrument of extending slavery into regions where it is not, and of riveting its chains where they are already imposed. To you, who are so well informed in all our affairs, and who so well understand the working of our political machinery, it is unneces-

sary for me to enlarge upon our position and our dangers. Governor Geary, you see, has been effectually driven from Kansas, not having received the slightest support in men, money, or influence, from the government at Washington; while the organized usurpation from Missouri is carrying everything with a high hand, and will, without doubt, construct a slave constitution for Kansas; and a servile Congress — the majority, I mean — and a corrupt administration will accept the infamous code, unless the elections in the Free States should alarm them. I am grieved and mortified that my country now stands before the world as the great patron and supporter of slavery, which, if the powers that are may have their own way, is to be extended and sustained by all the resources and power of the nation. Revolution may come, and, if this pressure should be greatly aggravated, it is not impossible that it will come. God reigns, and out of evil often is seen to educe good; and so it may be now, but I fear not in our time, and I greatly fear for my large family of the second generation: we of this generation see only the beginning of the end. . . . . .

CHAPTER XXVI.

HIS CLOSING YEARS: THE WAR: HIS RELIGIOUS THOUGHTS.

The Agreeableness of his Home: His Occupations. — Progress of Science in Yale College. — The Scientific School. — Benefactions of Mr. Sheffield. — Honors from the Scientific Association. — Tributes of Respect. — His Patriotic Interest in the War. — Letters to Miss Eliza Quincy: Reminiscences of Lafayette; Emancipation; Character of the Rebellion; Conduct of France and England; the Death of President Quincy. — Letters to Rev. Dr. Sprague. — Letters to Miss Maggie Lindsley, of Nashville. — The New Year (1861). — Death of Judge Williams and President Felton. — Birthday (1862). — New Year (1863). — Birthday (1863). — Commemoration of his Grandfather, (Mr. Fish,) at Stonington. — Letter from Dr. Hitchcock. — Letter from Mr. S. F. B. Morse. — Birthday (1864). — Death of Dr. Knight.

THE situation of Professor Silliman in the last years of his life was happier than usually falls to the lot of men. Though never rich, he was free from want and provided with competent means of support.* His health, considering his advanced age, was remarkably sound. He was seldom confined to the house by any bodily indisposition. His home was as pleasant as the love and care of a devoted wife could make it. On the one side of him was his son, Mr. Silliman, and on the other, his son-in-law, Mr. Dana, — the house of each being separated from him

* His income was increased by the salary which he received as President of the "American Mutual Life Insurance Company," an office which he held for about fifteen years, and resigned January 1, 1863. The duties of this station were not onerous, and they were fulfilled to the entire satisfaction of the Company.

by only a few steps. The "Journal of Science," on which he had toiled for so many years, was regularly laid on his table by these gentlemen, his successors in editorial, as well as academical duty. From their families he was daily receiving expressions of honor and affection. On every Sunday evening a troop of grandchildren gathered about him, whose songs he heard with delight, dismissing each little guest with a kiss. None of them will forget his beaming countenance in the midst of this family-circle. Numerous strangers, and among them many of his former pupils, who had occasion to pass through New Haven, resorted to his house to pay their respects to him. Occasionally he left home to visit relatives at a distance. These journeys drew him as far as Hanover, New Hampshire, the abode of his daughter, Mrs. Hubbard, and even to Bangor, then the residence of Mrs. Gilman. Social duties about home, — a class of obligations which he always fulfilled with scrupulous punctuality, — consumed a portion of his leisure. He did not make the mistake which is often committed by men who have led a busy life, and allow himself to be without employment. He was industrious to the end. He knew how to fill up the time. Many hours in the week, especially after visitors had retired at night, he read aloud with Mrs. Silliman. In a list of a part of the works which were thus read in 1857, are found the following: — Barnes's "Scriptural Views of Slavery," "a very searching and decisive work;" Commodore Perry's "Expedition to Japan," including the observations on Zodiacal Light, by Rev. George Jones; Kane's "Arctic Explorations," "full of intensely inter-

esting but most painful instruction;" Dr. Sprague's "Annals of the American Pulpit"; Olmsted's "Books of Travel in the South," "bold, impartial, and truthful;" Washington Irving's "Life of Washington," the "crowning labor of the brilliant life of the author;" Professor Sedgwick's "Palæozoic Rocks and Fossils of Great Britain," "a splendid work; it is to be regretted that, being in part controversial and antagonistic to the views of Sir R. I. Murchison, it is tinged with asperity and personality;" Loftus on the "Antiquities of Babylonia;" Coggeshall's "History of American Privateers," in the last war with Great Britain. "Heaven grant that these two Christian nations may never come into conflict again!" In another list, recorded in 1860, are found Livingstone on "Southern Africa," and Barth on "Middle Africa"; Thomson's "The Land and the Book"; Atkinson's "Travels in Siberia"; the "History of Elder Brewster, the Chief of the Pilgrims"; "Original Memoirs relating to Columbus and his Discoveries;" "Proofs of the Treason of General Charles Lee"; the "Life of Perthes," the distinguished German bookseller, — and other works. These titles indicate at once the extent and variety of his reading.

Besides the employments above named, no small portion of his later years was devoted to the composition of the Reminiscences of his own life, from which we have drawn so largely in this work, and to the assorting of his voluminous correspondence. In addition to these labors, he wrote a copious account of the character and services of his father, which he regarded as a pious duty, and did not feel at rest until he had fulfilled it. He desired the virtues of

this parent to be known to his own children. And letter-writing to numerous relatives and friends did not cease to be a considerable draught upon his time.

With the condition of the departments of knowledge in Yale College, which began with him, he had every reason to be gratified. Among the pleasing occurrences in the latter years of his life, was the liberal endowment of the Scientific School, in the origin and progress of which he had been intimately concerned.

Previously to 1842, there had been no means provided for the instruction of advanced students in the physical sciences, either at Yale College or at any of the other Institutions in the United States. Up to that time the academical students had been instructed in chemistry almost exclusively by lectures. Professor Silliman had been long in the habit of receiving into his laboratory a very limited number of persons who were fitting themselves to become teachers of the departments of science under his care. This number rarely exceeded two or three persons at one time. There were no recitations; the art of manipulation, the management of chemical processes, and the preparation of class-room experiments, were the chief subjects of attention. Among these gentlemen were many who subsequently became eminent in these departments. In 1842, Mr. Silliman, Jr., being then professional assistant to his father, made arrangements to teach a few special students in chemical analysis and mineralogy. For this purpose a small analytical laboratory was fitted up in the old College Laboratory, and the business of daily instruction in

experimental and analytical chemistry was commenced. Among the earliest students under this new arrangement was Mr. John P. Norton, afterwards Professor of Agricultural Chemistry in Yale College; and Mr. T. Sterry Hunt, since among the most distinguished men of science in the United States. These studies were entirely optional, and the students were not even recognized as members of the College, their names not appearing upon the catalogue. It was soon evident, however, that these very limited and imperfect means of instruction met a want which had long been felt in the country. Professor Silliman was the first to recognize this want, and with his accustomed zeal and sagacity, set about providing a way to meet it. Liebig's popular writings on Agricultural Chemistry had appeared just before this time, and excited everywhere an active desire in the public mind for more and better means of instruction in science, particularly in agricultural and other branches of applied chemistry. Young Norton had been moved by this cause to seek the desired instruction in Professor Silliman's laboratory, and developed so much genuine love of scientific investigation, that Professor Silliman urged him to prosecute his studies abroad. With this view he accepted the situation of private student in the laboratory of Professor J. F. W. Johnston, who was then, under the auspices of the Highland Society, laboring in the department of Scientific Agricultural Chemistry in Edinburgh. It was Professor Silliman who secured for Mr. Norton this eligible situation, where he soon won the esteem of his teacher and where his original paper on the oat, carried off the prize which

the Highland Society had offered for the best essay on the chemistry of that plant, and of the soil on which it grows. Meantime, the gradual development of the new branch of scientific instruction led to the design of giving it a recognized place in the University studies. A memorial, prepared chiefly by Professor Silliman, embodying the outline of a School of Science, and setting forth the reasons for the establishment of such a school, was presented to the Corporation of the College at their session in July, 1846. As was his habit whenever he had any subject of sufficient importance to be presented to this Body, Professor Silliman went personally before the Corporation to urge upon them the necessity of meeting the growing demands of the public, in this direction, by the establishing of such a new department. The request of Professor Silliman was complied with, and the scheme having been widened, at the suggestion of Dr. Woolsey, so as to embrace advanced instruction in other subjects, a committee appointed by the Corporation reported, at their session in 1847, the plan of a fourth department, devoted to Philosophy and the Arts. But the first Professors had been appointed at the earlier meeting in 1846. Correspondence had been opened with Mr. Norton, then transferred to Utrecht, where he was pursuing his chosen calling with Mulder, and it was decided at that meeting to commence operations by the appointment of this gentleman to the new Chair of Agricultural Chemistry, and of Mr. Silliman, Jr., to that of Technical Chemistry. These appointments having been made, and Professor Norton having returned in the following year from Europe, the Yale

Scientific School was opened for pupils. Beyond the income of five thousand dollars which a liberal benefactor of the College agreed to provide for a limited period, there were no funds. The College granted the use of a house which had been formerly the President's house, and was then vacant. The changes necessary to prepare this building for the uses of the new School, were paid for by the Professors out of their private means and from the small fund of the School itself, and for two years a rent for the building was paid to the College. The requisite apparatus and library were provided from the same sources. Narrow as were these beginnings, there was, from the first, evidence of vitality in the undertaking. A goodly number of pupils made their appearance, and in the first class were several whose names are now known on both sides of the Atlantic. Of these, three are now Professors in the Scientific Department of the College, — Mr. Brush, Mr. Johnson, and Mr. Brewer.

Professor Silliman regarded with the liveliest interest the growing prosperity of this important branch of the College, and was ever ready to coöperate in all plans for its better endowment and the enlargement of its means of usefulness. He had the satisfaction of living to see it receive the liberal benefactions of the gentleman whose name it now bears, as well as the government bounty under the Agricultural College Act, and numerous smaller private gifts. From the small commencement, with only two Professors, he witnessed its transfer to a spacious and commodious edifice, with a large corps of competent Professors, and a constantly increasing body of students.

When Mr. Sheffield added to his gift of the building a noble fund for the support of instruction, Professor Silliman signified to him, in writing, his warm appreciation of the spirit which prompted these large benefactions. To his note of thanks he received the annexed reply.

FROM JOSEPH E. SHEFFIELD, ESQ.

NEW HAVEN, *October* 22, 1860.
Monday Morning.

DEAR SIR, — I received on Saturday your valued note of the 19th, in which you are pleased to speak in flattering terms of my recent donations to the Scientific School of Yale College, and to add a brief narrative of the rise and progress of that important department of the College. I thank you for this paper, and will take care to leave it with others for future reference.

I have also received from the Faculty of the Scientific School a very flattering acknowledgment of my efforts in aid of the Institution. This latter paper I shall take care to leave with my will, to be read after my death by my children, in the fullest persuasion that its influence will be of a more lasting nature to them, and a more enduring legacy than bank-notes and gold.

To you, my dear sir, who have labored for more than fifty years, under rather discouraging circumstances, to build up that important department, it must be particularly encouraging and gratifying to witness, in the evening of your days, an increasing interest in the institution on the part of your countrymen, and an appreciation of its value that will not only sustain it in its present usefulness, but carry it forward to perfection.

For the complimentary manner in which you have alluded to my humble aid in its behalf, please to receive my warm and respectful acknowledgments; and, in the

hope that you may be spared many years, and realize all your hopes, I am, dear sir, with great respect,

Your friend and obedient servant,

JOS. E. SHEFFIELD.

PROFESSOR SILLIMAN.

Professor Silliman was also permitted to receive from another munificent merchant an announcement of his intention liberally to endow the sciences of chemistry and geology in the undergraduate department of the College. He had the full assurance that the work of his life would be carried forward hereafter on an expanded scale.

Partly on account of the attention he was giving to the manuscript works relating to himself and his family, which were written primarily for the entertainment and benefit of his children, and at their request, the records in Professor Silliman's Diary become much less frequent. They mostly consist of notices in connection with the decease of friends, and reflections of a religious nature. Some extracts, however, written during the last five years of his life, are subjoined.

August, 1859. *The Scientific Association at Springfield.* — Being the oldest member of the Association present, and having presided at the first meeting of the Geological Association, April 5, 1841, my attendance on the present occasion was complimented at its last meeting by the following resolution, moved by Professor Bache: "Resolved, that this Association express its gratification at the presence of our octogenarian friend at our meetings, and we hope that we may often meet him as he now is, with his eye undimmed and his natural force unabated." Rev. Mr. Buckingham, who was present, said that it was moved with

deep feeling, and that the audience of scientific men and strangers received it with hearty approbation. I accept it gratefully as a tribute to a veteran who is now *functus officiis*, but, I believe, with no feeling of pride or self-exaltation. . . . .

. . . . . *August* 8. *My Eightieth Birthday.* — And am I indeed an octogenarian! God be praised that, with power unimpaired, and with a cheerful hope for another life, I have been permitted to finish fourscore years! I cannot say that I have "only labor, pain, and sorrow, and that I rather sigh and groan than live." On the contrary, I have a cheering enjoyment of life, surrounded by a large and happy family of thirty-seven persons, old and young, upon no individual of whom, so far as I know, there rests any moral stain. About half of them have acknowledged their Saviour before their fellow-men, and we hope and trust that the younger members and the little ones will, in due time, become true members of Christ's visible church. This is the greatest blessing which I can ask for them; and if piety is theirs, we may hope that all necessary blessings will follow, confidence and affection from others, and enough of this world's goods to insure comfort and enable them to fulfil their duties in life with a good hope, and more I care not for.

On the occasion of the death of Mr. Charles Goodyear, the inventor, he writes as follows: —

Mr. Goodyear was often with me during his earlier years, and I aided him by advice and encouragement, believing, as I did, that he would eventually succeed, as he was industrious, persevering, and ingenious. One day I called on him at his humble cottage on Washington Hill, — *olim* Sodom Hill, — and found him making some of his preparations over the stove, while some of his family were sick. He told me afterwards that my visit encour-

aged him, and that, as I left the door, I told him to persevere, — that something important would yet come of his researches, and that when he should be ready I would make a noise about it, as I did in my lectures in Yale College, and by my influence. In March, 1852, being engaged in a course of lectures in the city of Washington, Mr. Goodyear arrived with his family, and, by permission, I introduced him to my friend, Thomas Blagden, Esq., and family.* In the course of conversation, Mr. Goodyear addressed me thus: "If it had not been for you, sir, I should long since have been in my grave; all my relations and friends discouraged me, and you alone sustained me by your opinion and your influence."

He always and through life placed a high value upon my support of him by a kind influence. While I was delivering my lectures in Washington, I made a rapid, and even perilous, journey to New York, to make oath before a court to a certificate which I had given, twelve or fourteen years before, of his discovery of the vulcanization of the rubber. . . . . .

It will be interesting to my children to know that kind and grateful feelings have been cherished towards their father for many years by some of those who have been his pupils. Dr. Alexander H. Stevens, — class of 1807, — the celebrated surgeon of New York, in a recent accidental meeting, — I believe it was at the Metropolitan in New York, while we were waiting to see the Japanese, — reverted with great warmth to his college life in Yale, and earnestly assured me that it was owing solely to my kind treatment of him, and influence over him, that he persevered in obtaining his education in Yale; that my treatment of him was soothing and encouraging; and, as he said, in language too strong and too commendatory for me to repeat, this was to him the only bright spot in his college life.

* Mrs. Blagden was my niece.

Dr. J. P. Kirkland, of Ohio, wrote to his niece, residing in New Haven, under date of January 1, 1860:—

"It hardly seems possible that Professor Silliman can be active. In the year 1806, soon after his return from his first visit to Europe, I listened with great interest to the details of his tour, while he was relating them to Augustus and Chauncey Cook in Wallingford, where he was visiting his mother. I was a mere boy, but looked upon him as quite a mature man. His first journal of travels I read and re-read soon after its publication. To him I feel that a heavy debt of gratitude is due from me. In the autumn of 1813, I commenced attending his chemical and mineralogical lectures in New Haven, and they awakened a taste for scientific investigations which have afforded the larger share of my enjoyments and pleasure through life. Besides, he extended to me, on several occasions, some little favors, principally through the medium of Lyman Foot, who then was a lad in the employment of Professor Silliman. These favors to me were trivial, to be sure; but he had a way of doing acts with an unaffected kindness which few possess. From childhood I had heard the College, its Faculty, and especially its President, spoken of with disrespect. The epithet of *Pope* was ever attached to the name of Dr. Dwight. I viewed him and his associates as imperious tyrants. Personal knowledge of Professor Silliman induced me to make him an exception. Prejudice thus imbibed had led me to pursue my studies at the Episcopal Academy at Cheshire rather than in Yale. When about to attend medical lectures, I prepared to resort to either New York or Philadelphia. A kind message, sent from Professor Silliman, caused me to visit New Haven and to enter the Yale Medical College. Either by design or accident, I was thrown in the way of President Dwight, and made his acquaintance. After a brief period, I formed

the opinion that he was one of the greatest and purest of men, and that Professor Silliman was one of the most finished and kindest of gentlemen. Near half a century of experience and observation have in nowise changed that opinion.

When the civil war broke out, Professor Silliman's whole heart was enlisted in the cause of the country. He watched the progress of the conflict with intense interest, and was generally hopeful as to the result. To the administration of Mr. Lincoln, for whom he had voted, he rendered his entire confidence and unwavering support. That the war might somehow work out the extinction of slavery, he, in common with other good men, earnestly prayed. At the conduct of England, a country towards which he had always cherished a filial attachment, he felt deeply aggrieved. The precipitate recognition of the Confederates as a belligerent power, followed by the culpable remissness of the British government in permitting vessels to sail out from English ports to prey on our commerce, together with the flippant declaration of Palmerston in the Commons, that England would not modify her municipal laws to prevent this international injustice, and the unfriendly, contemptuous tone of most of the leaders of public opinion in that country, who seemed to be resolved not to know, or, at any rate, not to publish the truth, were felt to be in the highest degree offensive. Professor Silliman lost for England a large portion of that peculiar respect which he, like most cultivated Americans, especially New Englanders of the Federalist school, had always felt for "the mother country." And this change of feeling took place not without pain.

November 29, 1860. *Thanksgiving Day. Southern Revolt.* — The aspect of the times is very serious, and calls not only for the wisdom of statesmen and patriots, but for the prayers of Christians, to avert a revolt which may end in civil war. At present several of the Slave States appear to be much incensed, and it is no longer safe for a Northern man to travel, even on the most innocent business, in most of the Slave States. Personal insults, and abuse most gross and cruel, even to hanging, are inflicted on mere imputation of abolition opinions, without overt acts or speech. Travelling in the South for a Northern man is now more dangerous than among the Arabs of the desert, who can be bought off by small presents. John C. Calhoun, once Vice-President, and disappointed of the Presidency, first originated the scheme of a distinct sovereignty of the Slave States, to cover islands and countries adjoining, to be bought or conquered. The very alarming state of things cast a shadow over our enjoyment of this day. Mrs. Silliman was engaged at home in domestic duties. I attended in Dr. Bacon's church, where he preached an excellent sermon upon the present crisis. It was solemn, judicious, and discreet.

In his letters to friends, the war and its probable issues, especially in respect to slavery, were prominent topics. Among his correspondents was Miss Eliza Quincy, daughter of Hon. Josiah Quincy, a lady for whose virtues and accomplishments he entertained a great respect. The first of the letters which immediately follow, however, relates not to the war; but contains interesting reminiscences pertaining to the visit of Lafayette to Boston in 1825.

TO MISS QUINCY.

NEW HAVEN, *August* 23, 1861.

. . . . . YOU are right in the impression that the biography of your mother, besides its intrinsic merits, has a peculiar attraction for me, as bringing into view many eminent persons whom I have known personally, and many more whose fame, and the events with which it was connected, were familiar to me as they passed. When, in 1824, Lafayette was approaching this town from New York, I drove out upon the hills west and south, with my two older daughters of the ages of fourteen and twelve, and my only son of eight years. Lafayette was in an open barouche carriage with his son; and we, being in a similar vehicle, which was drawn up by the side of the road, — we all rose erect, and were uncovered as the friend of Washington approached, and made our obeisance, which was promptly returned. Calling with the crowd of citizens at the reception in the hotel, with Mr. Wadsworth, who had lived in Lafayette's family in Paris, he was instantly recognized and warmly embraced. My little boy — grandson of his early friend and associate in arms, the second Governor Trumbull — he kissed affectionately; and he yielded to my invitation to retire as soon as possible to my house, where he would find Mrs. Trumbull, widow of his friend Governor Trumbull. He went accordingly with his son and Secretary and the Mayor of our city. He was refreshed by the retirement; and the two hours which he passed in my family have ever remained a memorable epoch.

At the ensuing Commencement of Yale, I was sent with another gentleman to New York, to invite Lafayette to honor the occasion by his presence. Our arrival by the steamer was early in the morning, — too early for an audience; but, to secure it at a proper hour, I sent up a card to the bedchamber, announcing our errand, and our readiness to wait his convenience. He sent for us at once to

the dressing-room connected with his bedchamber, and there we found him in gown and slippers, — the silk cap still on his head. He received us with graceful kindness; but previous engagements had filled the allotted time. Again, when President Quincy kindly piloted our Connecticut party to their seats in the vast amphitheatre of human beings who were waiting the words of the great orator on Bunker Hill, I was jostled by the crowd, and found myself among the seventy or more veteran survivors of the battle of June 17, 1775. As no one questioned my right to be there, I was not displeased to find myself in such company. As I listened to Mr. Webster's glowing oration, I searched with my eyes for Lafayette, supposing that he would be of course among the magnates on the stage with the orator; but I searched in vain. At last, when Mr. Webster alluded personally to Lafayette, up he rose from among his humble fellow-soldiers of the battle, — where, with his usual happy tact, he had placed himself, rather than among privileged orders on the stage.

Mrs. Lloyd had yielded her splendid drawing-rooms for the military reception of General Lafayette's old comrades in war. I was present, and was surprised at the readiness with which he recognized the men of the Revolution. One of them assisted in bearing him off from the battle-field of Brandywine, when wounded in the leg. I believe I must give you the credit of summoning up in my mind vivid recollections of that memorable June 17, 1825, to which you have so beautifully alluded. Those interviews recur to my memory like pleasant visions.

That splendid reception in the united houses of Mr. Webster and Colonel Thorndike (a door, cut for the occasion in the partition-wall, made them one), was the most imposing scene of the kind which I ever witnessed. How grand and how joyous it was! Lafayette, the observed of all observers, was the monarch of the night, and no monarch ever held a grander levee: it was morally grand, with moderate physical excitement.

The lady who did me the honor to lean on my arm that evening will remember that the *popping* of the corks of champagne-bottles was no unlike counterpart of the popping of the guns in the battle on the hill; but with this important difference, that the reports were harmless. That evening has ever remained with me a bright subject of recollection, and it never recurs without recalling, in agreeable associations, the lady who made the occasion so pleasant to me.

You perceive that I am in sympathy with you in recalling past events, and persons who have passed away, and their features, their sayings, and doings. Those able and excellent men of the Connecticut delegation, to whom you refer, are distinctly in my recollection; but I will not trust myself further in this line, lest I should weary you. Your notice of Colonel Tallmadge, and his protection of yourself, is very interesting, and deserves to be preserved among the incidents of his life. I regret never to have seen the biographical memoir by his son, and I must endeavor to obtain it from him. He was a gallant soldier, an eloquent speaker, and an accomplished gentleman. I hope that your nephew will escape without injury in the conflicts that must be expected in this very wicked and causeless war. Several of our personal, and some of our family, friends have been engaged in the service, and those that were in the late disastrous battle have returned without personal injury. . . . . .

TO MISS QUINCY.

NEW HAVEN, *March* 21, 1862.

. . . . . I AGREE with you entirely in the wisdom of President Lincoln's emancipation message, — grand and wise views, present and prospective; and his communication, abounding with good sense, is proved to be his own, without revision by any one, — as, in the midst of excellent sense, there is an absence of scholarly finish; it is strong, but rough-hewn and knotty.

I am very much obliged to you for the intensely interesting narrative of the plot of the assassins, and of the manner in which it was providentially defeated.* How desperately wicked has been this rebellion from its first hour to the present. It has been exceeded in wickedness by only one conspiracy, and that was the first in the order of time: its leader was an able captain, but he was beaten and thrown over the battlements of heaven. I trust it is not unchristian to wish the leader of the present rebellion may meet with a similar fate.

You allude to the efforts in behalf of the liberated slaves, and among the results of this struggle we may regard the spirit of benevolence which it has excited as an important benefit, and perhaps in no direction more important than on behalf of the immense host which must be protected, relieved, and directed by great efforts, both of government and individuals. . . . . .

TO MISS QUINCY.

NEW HAVEN, *December* 5, 1862.

. . . . . YOUR remark respecting our transient friendships is most painfully true, as my long life has enabled me fully to realize; but there is a friendship which time cannot destroy, and which will revive and flourish in a better world. I hardly know whether to congratulate your nephew and his friends on his promotion to higher duties in this dreadful struggle. We cannot doubt that he will honor the eminent ancestor whose commission, revealed after the repose of a century, must appear to him almost as if he were hailed from another world, and told to go forward and to do his duty well, as no doubt he will. My best wishes attend him. . . . . .

*The plot to assassinate Mr. Lincoln on his way to Washington, just before his first inauguration. — F.

TO MISS QUINCY.

NEW HAVEN, *April* 8, 1863.

. . . . . IT is grateful to our feelings to view New England, as regards its state governments, as a unit, ready and willing to coöperate with our loyal sisters in putting down the Rebellion. Still we are waging an anxious war, terribly destructive of life, and fruitful of horrid mutilations of the human form divine, caused by the ingenious inventions in means of destruction, so that the old-fashioned war by bullets and field artillery seems comparatively a civil game.

I trust your father's mind is cheered by hope, as my own is; and if I am disposed sometimes to despond, I endeavor to realize that the rebels hold not one foot of free territory; that we hold several of the former Slave-States, and parts of several more; that nearly all the fortresses stolen from us by the rebels are recovered; that we hold their principal southern city, and are menacing the rest; that our nation is girding herself for the first time in this war, as a nation; and that our revenue surpasses expectation, and is cheerfully paid. In the view of all these things, hope prevails, — although the war may be protracted, and we have the difficult problem to settle as to the eventual disposition of the colored people, — but God, who appears to have permitted this war for the sake of destroying slavery will, I trust, provide means for the full accomplishment of his own designs, although human foresight may not see the end. . . . . I am glad if there is an improved feeling in England towards this country. I believe it has risen little above the level of the middle classes. It is but too evident that both England and France are hopefully looking to this crisis as the struggle that is to destroy our national unity. France insults us in no ambiguous language, when she makes her wicked invasion of Mexico, on pretence of resisting the progress of the Anglo-Saxon race.

Should she, contrary, I believe, to the national sentiment at home, obtain a firm establishment in Mexico, it would not be long before she would revive her old claim to Texas and Louisiana, and if she should sustain the Southern Confederacy, the two powers may then agree on the division of the old Gallic Territory in the Southwest.

England favors the enormous piracy on our commerce by permitting any number of piratical ships to be built in Britain, and to be equipped for piracy, and to sail without hindrance, while her merchants are permitted to send out to Charleston and other ports of the Confederacy an immense amount of warlike stores and clothing, medicines, arms, great and small, and every appliance of actual war. Several of these ships, it is true, have been captured by our blockading squadrons; but so many of them succeed in running the blockade, that the rebels are bountifully supplied with all they need, except provisions. In the mean time our ships, in great number, and in the aggregate of immense value, are robbed and burned on the seas, in distant as well as proximate regions. We are now submitting to travel, to transport our property, in English bottoms, and thus, in both ways, our commerce is crippled. The English government look on with pleasure, and anticipate the time, they imagine not remote, when the United States will be divided into an empire on the Gulf, another on the Pacific, and perhaps a fourth in the Northwest. The influence of the dying counsels of Prince Albert, and that of his good Queen, have hitherto operated as a restraining power, now supported by the outspoken honest sentiments of the masses in England, which, when fully expressed, no English ministry would ever dare to disregard. There is also great meanness in taking advantage of this atrocious Rebellion, to insult and cripple us when we have on our hands a war which demands all our energy and resources. But the time may come when these accounts will be settled in Quebec.

TO MISS QUINCY.

NEW HAVEN, *July* 8, 1864.

IN consideration of the reverence and admiration which I have, during many years, cherished for your late beloved and honored father, I doubt not, my dear Miss Quincy, that you will pardon this early expression of my sincere sympathy in your great loss, and the deep regret which I feel that our country can no longer reckon among the living her most venerable and venerated patriot. Should we not, however, be deeply grateful that a kind Providence gave him to us and to his country, until he was well advanced in the tenth decade of his century of years? Nay, he is not now dead, but has left behind him the living influence of his long and noble life, and his name is enrolled with that of Washington, and the band of patriots who acted with him in the cause of their country and mankind. To that cause he was faithful to the death. I have just reperused his noble response to the young men of the Union Club, of February 27, 1863, the last production of his pen which I have seen. I trust that his faith and hope sustained him in his transit to immortality. . . . . .

TO MISS QUINCY.

NEW HAVEN, *August* 13, 1864.

. . . . . I CANNOT sufficiently thank you, my good friend, for the faithful record which you have given me of your father's closing weeks and days and hours.

How tranquil and chastened was the scene of death, — quiet, calm, and resigned, with only his devoted daughters and faithful attendant, while we know that God and the Saviour were nigh. You have given me a particular pleasure by the assurance that "there was no friend whom your father more highly estimated and valued than myself, and that for many years I have held that place in his affection, heightened by a mutual sympathy regarding the great

struggle in our country." The great kindness received by me and my family from your parents, early won my gratitude and friendship, — and when I was called to act a public part in Boston, occupying no fewer than six seasons, and in a position both conspicuous and responsible, I felt strong in the support and countenance of President Quincy, and it is a great satisfaction to me to know that I had a place not only in his esteem but in his affection. . . . . .

How solicitous he was that the war might prove to be the door to emancipation, is shown from the ensuing letters to Dr. Sprague.

TO REV. DR. W. B. SPRAGUE.

BANGOR, MAINE, *August* 5, 1861.

MY DEAR AND REVERED FRIEND,— .... In all that you write concerning this most atrocious and wicked war, and in all your pious and wise sentiments looking to the great Governor of the world, I fully concur. I also agree with you perfectly in your estimate of the probable issue of this conflict, as regards those on whose account it is waged. They perfectly understand the matter, and no doubt the slave quarters on the plantations, and the kitchens of the houses of cities, are the scenes of animated discussions and of interesting communications of the progress of events. Oh that some State would inaugurate the experiment of making their slaves hired laborers on their plantations, under due regulations to prevent idleness and vice, — and might we not hope for success as in Barbadoes and even in Jamaica. One successful result would induce other States to follow, and the negro would become, in many instances, ambitious to acquire property and character. But the entire subject rests with God, who will, in due time, dispose of the great nation of Africans, now by a million larger than our entire nation was when our Revolution began. He will dispose of it in some way that we cannot now foresee. The South

is infatuated and deceived, and it is madness to contemplate an indefinite augmentation of this black population. The national sentiment seems now to be maturing to the conclusion, that, as slavery is the cause of our troubles, it must in some way be destroyed,— Heaven grant that it may be done in a way consistent with justice, mercy, and righteousness! . . . . .

TO REV. DR. W. B. SPRAGUE.

NEW HAVEN, *June* 15, 1861.

. . . . . I ALSO have been impressed with the large harvesting, of late, of wise and good people, who have been, perhaps, taken away from the evil to come. The death of Judge White of Salem, inflicted a loss upon me as well as yourself. I knew him first at Salem, where I delivered a course of Geology in September, 1834, and it was my first effort out of Connecticut. Judge White was an attentive hearer, and a constant one. You, I presume, have seen his large library of literature, rather than science, which, although it was appreciated by him, was not his first love. After the course was finished, he remarked to me to this effect: "When in your introductory, you said that Geology was among the natural sciences, second only to astronomy in grandeur and sublimity, I doubted, — but I must now in the language of the courts say, you have made out your case, and are entitled to a favorable verdict." From that time on we were friends, and occasionally met in Boston, Cambridge, and Salem, and once in my own house. He was a lovely gentleman, — a fine scholar, and, I hope well for him, although he differed from us. Does not the more enlarged experience from progress in life tend to increase our charity, and have you not found even your own liberal and catholic mind enlarged by your peculiar labors of late years, so as to embrace more of your fellow-men within the circle of your charity? Judge Shaw and Judge White were hardly divided in death. Like yourself, my dear friend,

I am deep in the newspapers, and deeper still in thoughts and anxieties for our country. Many of my night hours have been passed in sleepless anxiety, from which even prayer could not always relieve me. My solicitude was most intense, while a doubt remained whether Washington was safe, and it was not materially relieved until the great uprising of the North and Northwest — a moral miracle — proved that God had taken the matter in hand, and would, in the end, vindicate the right, while slavery is committing suicide. . . . . .

. . . . . The entire movement is very wicked. A conspiracy, avowed from the first to have for its object the overthrow of the most beneficent human government that the world has ever seen, — a government dispensing countless blessings to the people and blessings only, — is wicked beyond the power of language to express, and if the effort were successful it would almost extinguish the hope of mankind for free and equitable government. . . . . .

During the progress of the war, he corresponded with a young lady of Nashville, Tennessee, who was a remote connection of his family, but whom he had never seen. One of her letters to a friend at the North had been shown him, and the loyal spirit which it breathed had strongly interested his mind. An accident which befell this letter led to the opening of his correspondence with her, a small portion of which is given below.

TO MISS MAGGIE LINDSLEY.

NEW HAVEN, *September*, 1862.

. . . . . As my own domestic circles include twenty-three grandchildren, of whom fourteen are females, — of all ages from childhood to womanhood, not to mention the matrons, — you may readily imagine that I am ever under a benign female influence, and that my affections may, therefore,

remain full of sympathy, and that they are not chilled by age. As you appeal from the photograph which you have been so kind as to send me, and give me the pleasant assurance of a blooming face and a sunny radiance in the living original, — so permit me to add that the grave features which did not smile upon you when you opened the letter, will glow with a warm welcome when you enter our door, and that he who wears them will laugh with the children, and play with them too, and respond in sympathy with all that is bright and pleasant in the family. Excuse this implied self-commendation. I have, indeed, St. Paul for an example, but I will not shelter myself under even that great name. I will rather add that I wish to convert the grave veteran professor of your imagination into a familiar friend, with whom half an hour's conversation will make you feel as if you had known him always. I will enclose, to the care of your grandma, a photograph or two which you have only to clothe with a smile, and you will instantly be at home with the original. . . . . .

TO MISS LINDSLEY.

NEW HAVEN, *March* 2, 1863.

. . . . . Your thoughts on the emancipation proclamation, and on the subject of slavery generally, do you much honor. It is, I believe, a rare example that a person educated in a Slave State, and accustomed to regard that species of injustice as a necessary element of society, comes voluntarily to regard it as a violation of natural right, and as inconsistent with our Saviour's golden rule of doing to others as we would wish them to do to us. This is the more remarkable in a person so young as yourself, and in a young lady too, trained in a family in which, no doubt, the yoke has been made as easy and the burden as light as is consistent with the enforcement of an unwilling service, — generally unwilling, because uncompensated; although I am aware — having known many slave-holders, and having travelled in most

of the Slave States — that there are many instances of grateful attachment to a master or mistress on account of kind and generous treatment. Still we must regard slavery as a system of oppressive coercion, violating the natural right to one's own person and faculties, and the results of the labor, effort, and ingenuity of the individual, — and moreover his right to all that belongs to the family relation of wife and children. Although my father — a lawyer, a deacon in the church, a magistrate, and an officer in active military service through the American Revolution — was an owner of slaves, and although I was brought up among them, I do not remember the time when slavery was not detestable even to my juvenile mind, and I have been expecting the judgment of God upon us for this national sin: and as nations do not exist in the other world, they are punished in this world. We are suffering that punishment now, — the North measurably as having participated in the slave-trade, and having participated also in the profits of involuntary labor; the South is being punished without measure, as having cherished the *institution*, — as they chose to call it, — and as having waged, and as still waging, a wicked and bloody war, undertaken for the perpetuation of slavery, and for its extension without limit of time or space.

The war was inaugurated, also, to gratify the ambition of a few leaders who would not submit to the constitutional result of a lawful election. Slavery is, therefore, the support and cause of this most sanguinary rebellion, and God is punishing the nation while he is working its deliverance from the sin, shame, and danger of holding in bondage 4,000,000 of human beings, born generally on our soil, and entitled to all the rights and privileges of humanity. God has permitted this rebellion in order to destroy slavery, and we can see why He has not granted uniform success to the Federal arms, and has sometimes even overshadowed us with dark clouds, and those gathering again and again, but with cheering sunshine between. Nothing less than this suffer-

ing and alarm would have brought the government and the friends of freedom to realize that palliatives would never effect a cure, and that the malignant cancer must be extirpated. If we had been uniformly successful, and that early, there might have been a truce, but there would have been no permanent peace, and no security. . . . . .

TO MISS LINDSLEY.

NEW HAVEN, *July* 13, 1864.

. . . . . WE of our family circle have been not a little interested in your account of the fidelity and devotion of your domestic servants. This tells well as to your treatment of them, and it shows that they are not without good sense to perceive that they have a happy home. When those who wish to retain colored servants will treat them with justice and kindness, — paying them reasonable compensation, — forbidding the lash, the branding iron, and the bull-dog chase, they may hope for good and attached servants. To all this there will doubtless be exceptions. We understand from good and trustworthy authority, (I have my information from personal friends personally conversant with the facts,) that the negro laborers on the newly organized plantations on the lower Mississippi, being treated as I have described, are entirely faithful and obedient, and among the most industrious and faithful of laborers. . . . . .

TO MISS LINDSLEY.

NEW HAVEN, *September* 29, 1864.

. . . . . I CONGRATULATE you upon the splendid success of General Sherman, justly regarded as of the highest importance to the Union cause. We trust he will hold Atlanta and sustain his communications with you; and as Sheridan and Farragut have nearly finished their local warfare, we trust that Grant will be permitted to bring up that triumphant *finale*, which with God's blessing shall save our cause, — which is the cause of God and of mankind. . . . .

The certainty that his remaining time must be short, was not absent from his thoughts; yet it brought no gloom.

January 1st. The New Year 1861, *Æ.* 82. . . . . I am now nearer by one year to the eternal world, and it may be written of me, "this year shalt thou die;" and I am admonished by the removal of my youthful granddaughter * that I must soon follow. If I could not rely upon the great salvation wrought out by our Saviour, I should be dismayed at the approach of death. . . . . I hope I am not deceived, and that I may be accepted by my Maker, although I may appear among the most humble of the redeemed. . . . .

Judge Williams.† . . . . . He was two years in advance of my brother and me in Yale College, he being a Junior while we were Freshmen, — he having entered the College in 1790 and we in 1792. We were, in 1792–3, fellow-boarders at Dr. Joseph Darling's, in the Greenough House, that stood in front of what is now Divinity College. In our walk to College one morning, Mr. Williams mentioned that the French had guillotined their King, Louis XVI. As his death took place on the 25th of January, 1793, the mention of it was probably in February. I was then in my fourteenth year, nearly sixty-eight years ago, and the recollection of it is still fresh in my memory. From that period our acquaintance was continued, and as Mr. Thomas S. Williams had a brother, Samuel Porter Williams, in my class, we were drawn nearer together by this circumstance. In February 1798, I resorted to Wethersfield, being in my nineteenth year, and during nine months I instructed the subscription school. For a few weeks I was a member of the family of Sheriff Williams, father of Thomas S.

* Miss Maria T. Church, who died December 23, 1860. — F.

† He died December 15, 1861. — F.

I had occasional meetings with him in successive years; and after my marriage, that connection brought me into familiar intercourse with that portion of Hartford society with which Mr. Williams was intimate.

This season — the winter of 1861–2 — has been distinguished by the removal of many eminent and excellent persons. Among them no one has struck me with more surprise than President Felton. He was a very interesting man, and it is a subject of regret with me that an Address, when he was inaugurated, has lain on my table unread and not acknowledged. I intended to do both, but the opportune moment seemed never to arrive. Being at Cambridge with Mrs. Silliman in August last, we called at President Felton's door, and I left my card, he not being at home. I think I should have then thanked him for his Address, but it is now too late. Harvard now numbers four ex-presidents living and in health,—President Quincy, Dr. Walker, Mr. Sparks, and Mr. Everett, and I can remember President Willard, President Webber, and President Kirkland. Yale and Harvard are both in mourning, — we for Prof. Larned. President Day, Rev. Dr. Fitch, and myself are all that remain of the old Faculty of Yale.

July 30 *and* 31, 1862. *Commencement Season.* The meeting of the Alumni was held as usual. . . . . My own class is now reduced to five persons, — John Harvey Tucker of Bermuda, Levi Rollins of Wethersfield, Timothy Bishop of New Haven, and the two Silliman brothers. . . . . Prof. Thacher gave interesting reminiscences of the late Mr. Edward C. Herrick, and Prof. Porter of the late Prof. Larned. Judge Ellsworth brought forward, and by a powerful speech supported, a strong resolution regarding the war. . . . . Seventy Commencements have been held since I entered the Institution with my brother in 1792,

and I believe I have been present at about sixty. Perhaps this may be my last, — that rests with my Maker, and I hope to be satisfied with the decision. It cannot be long before my class will become extinct, and we shall pass into the vast group of the stelligeri. Oh that we may be among those that shine as the stars in the blessed world!

August 11, 1862, being the first Sabbath in my eighty-fourth year, I acknowledge with deep and joyful gratitude the prolongation of my life to this advanced period. I have survived many dear friends, — both my parents, my brothers of the half-blood, four of my children, and their blessed mother of precious memory, both her parents, her surviving sister, Mrs. Wadsworth, and her husband Daniel Wadsworth, and very many other highly valued friends. . . . . In the first century of Yale College there are only twenty survivors, and five of them of the class of 1796, — my own class. It will not require another decade of years to remove every individual of the twenty survivors. They must all be octogenarians or more, and some of them nonogenarians, and one is about one hundred, — he will be of that age September 9, 1862. It would probably be a large allowance to give the twenty an average of five years; that addition to my own years would carry me to eighty-eight, and my brother to his ninetieth year. I endeavor to realize it as a settled conviction that my remaining time must be short, and may be very short. My reliance is placed entirely upon my blessed Saviour, and being without any claim to personal merit in the view of my Judge, I commit my soul to the lifeboat of Christ, and hope to reach the heavenly shore.

In company with Rev. George Jones he went to look at the iron-clad vessels which were in process of construction in New York.

November, 1862. If all our iron-clads that are now in progress should be successfully finished, we need not fear even the power of hostile England as manifested in the allowed construction of ships within her ports, destined to prey upon our commerce on the high seas. Sea-going iron-clads may, by-and-by, supplant the wooden walls. Forts also, of brick or stone, or even of wood, may be iron-clad, and magazines and barracks may be protected in the same manner. It seems probable, therefore, that on the whole, humanity may gain by this strange invention. This will not, however, prevent bloody battles on land between armies that enjoy locomotion. It is true that before the invention of gunpowder, men went to battle covered by iron armor, and the horses even were protected more or less in the same manner, which in this age would afford no protection against rifled cannon and against the explosion of shells. May God of his infinite mercy grant that the time may be hastened when wars shall cease, and when the mild influence of the gospel of peace shall teach mankind to love each other as brethren!

1863. — *The New Year, January* 1. . . . . I am now in the front rank of aged people among us and among my connections. President Day entered his ninetieth year August 3, 1861. My brother, G. S. Silliman, finished his eighty-fifth, October 26. Timothy Bishop, my classmate, was eighty-five October 22. Mrs. Gold Silliman was eighty-four October 3, 1862. I was eighty-three August 8, 1862. My classmate, John Harvey Tucker, of Bermuda, if living, must be eighty-six: he was seventy in August, 1846, when here. Levi Rollins, a classmate, was seventy-one in August, 1846, and must now be eighty-seven, — I have not heard of his death: his residence is in Wethersfield. My early friend, Betsey Whittlesey, was eighty-eight in October, 1862. Although I am the youngest among the aged living friends named above, I am fully in

the front rank, and my removal at any time will not be extraordinary, but may be expected soon in the regular course of mortality. I await the event with calmness, not from any confidence in my own merits, but I confide entirely in the mercy of God, manifested through his Son, whose atonement covers even the vilest sinners if they repent and submit themselves.

August 8. *Birthday, Aged Eighty-Four. Prayer of Thanksgiving, Penitence, Faith, and Hope.* — O Thou great and glorious God, revealed to us in three persons, — Father, Son, and Holy Ghost! Although we cannot comprehend the unity of God manifested in three persons, we see that there are manifestations of Creator, Redeemer, and Sanctifier, in the creation of the universe, in the merciful provision for the redemption and salvation of mankind, and their sanctification by the Holy Spirit as the means of preparing them for salvation. O heavenly Father, Creator, Redeemer, and Sanctifier! I humbly accept the fact as I accept the revelations of science, which are equally inscrutable to me as regards their nature and cause, although the effects are manifest. I am aware, blessed God, that my mind is dark and ignorant by nature; still, enough is brought to light in nature and revelation to justify our faith in what we cannot now understand; and what we know not now, we may know hereafter. My life has been prolonged to fourscore years and four. I trust, heavenly Father, that I am deeply grateful for this long life full of mercies, although very imperfectly requited to Thee by the obedience due from a humble being to my great benefactor. To recite my mercies would be to recount the story of my life. . . . . While recounting my mercies, I would not forget my sins and follies. When I compare my heart and life, O Thou infinite triune God! with the purity and strictness of thy holy law, — with thy law which is all reasonable and right, — I feel how unreli-

able must be my hopes of salvation upon the ground of personal merit. Merit! Although we may feel that we have been just and kind to our fellow-men, we can have none that can justify us in the sight of God, — of a being of sinless perfection, of boundless power, of strict justice, but, happily for poor sinful human beings, of mercy also, overshadowing all his other perfections. We need not approach Thee simply with fear and trembling, but with deep humility, and humble confidence that Thou art both able and willing to save those who come to Thee with sincere penitence and sorrow for sin, and trusting in thine infinite mercy. The bruised reed Thou wilt not break, and the smoking flax Thou wilt not quench. Thou hast justified our hopes of salvation if we come unto Thee, trusting in the divine Saviour. In God's inscrutable providence, a virgin, forewarned by the visit of the angel sent down by Thee, — espoused, indeed, but not yet given to any man, — a virgin did conceive by the power of the Holy Ghost, and a child was born, not only sinless in nativity, but destined to remain sinless through his wonderful life, — the only sinless life that has ever been seen in our world; — and this immortal being, born of woman, became our elder brother, subject to all our innocent infirmities, and innocent still under every temptation. Thou didst permit him to represent, while on earth, thine own infinite purity and power. Although he had not where to lay his head, while he went about doing good, blindness, deafness, lameness, paralysis, and death itself obeyed his voice; the blind eyes saw; the deaf ears heard; the palsied limb became active again; and the dead were raised to life. This, O heavenly Father, is the divine Saviour in whom we trust. His death on the cross assures our hopes of salvation. Still this death on the cross, — this death of bodily agony, and still more of mental agony, — this ignominious death, — death on the cross between two thieves, — death, not by a moment of transient agony, as in the

executions of our time, but by long hours of cruelty and protracted sufferings, — this death is to us a great mystery. It is hardly permitted to us to inquire whether the noblest visitant of our earth, clothed indeed in human form, but without sin; who went about doing good; who spake as never man spake; who commanded the elements, and knew what was in man; — whether his life, his teachings, his works of mercy, and his miraculous ascent to heaven, leaving his commission to his disciples of every age to preach the Gospel to every creature, — whether all this would have been sufficient to prove his heavenly mission and secure its end without subjecting the Son of God to the ignominy and heartless cruelty of a heathen, a Roman execution. Here, again, we must "wait the greater teacher, death, and God adore." Even the Saviour cried: "If it be possible, let this cup pass from me!" but his heart replied: "Not my will but thine be done." He left to his friends the consolation of the Eucharist.

"'T was on that dark and doleful night — "

The whole hymn is copied in the Diary.

He participated with warm interest in a successful effort to procure a monument to be placed in the Cemetery at North Stonington, in honor of his grandfather, Rev. Joseph Fish. He took part in the ceremonies relating to this venerated ancestor, when his descendants were gathered together, and a commemorative discourse was preached by Mr. Hubbell, the present pastor of the church in that place. This occasion excited many interesting recollections.

Several persons who had carriages took our party by appointment to the site of the ancient black meeting-house, of which not a vestige remains. We next visited the cemetery, and saw the new monument, which gave us entire

satisfaction; and it is the most conspicuous object there. The original plain stone that was erected in memory of my grandfather is still preserved, and, after being cleaned, the inscription is quite legible. At the foot of this grave are two small graves, one of an infant son of my grandparents, and the other of a young daughter of my mother, who died while she was on a visit at Stonington. Mr. Hubbell uttered over the grave of Mr. Fish a very solemn prayer. We had little time for the reflections due to the place. I recall to mind the funeral scene of May, 1781, when my father and mother, the Noyes' sons, and the two little boys, with sympathizing friends, were assembled around this grave, eighty-two years ago (to May, 1863). In the meeting of yesterday, myself, a grandson eighty-four years old, spoke of the memory of grandparents, who had departed more than eighty years ago. We made a rapid transition to the site of the house of the reverend ancestor. A new house had been built nearly on the site of the former building. Nothing remains except some timbers and other parts of the old building, that are wrought into the new. The well remains, and we drank of its excellent water. A few old apple-trees, belonging to a former orchard that produced very good fruit, are still extant. The site was pleasant, and Long Island Sound can be seen from the ground. This place was the seat of many interesting events in the by-gone years, and here my grandfather wrote his excellent letters and sermons, and fervent prayers ascended daily to heaven. My son has written a fuller account, in some respects, of our Stonington experience. Nothing was wanting but more time to think, converse, and observe. We left the place with the most agreeable impressions, and with grateful, pensive thoughts of the past.

The present of a photographic likeness of himself, drew a touching response from his now venerable pupil and friend.

FROM DR. EDWARD HITCHCOCK.

AMHERST, *May* 7, 1863.

DEAR SIR, — When I opened your letter, my eyes fell first upon the photograph, and it is so very perfect, and gives the expression of your face so exactly like what it was when more than forty years ago I first heard you lecture, and a hundred times afterwards, that a crowd of reminiscences came over me, and I had quite *a crying spell* before reading the letter. This shows the weakness of my nerves; but it also shows how powerful was the influence of your eloquence and your kindness upon me in those early days, when I was bashful and uncultivated, poor and without scientific friends. Certain it is that your instruction and encouragement and example have had more influence upon me to make me what I have been, than those of any other man, and, if I have not been grateful, God forgive me!

We have both, as you say, had interesting fields of labor; yours much the widest and most important; mine was humbler and rough, but still opening opportunities for doing good. I thank God for it, and only lament that it has been so poorly cultivated. How cheering it is to know that we have the righteousness of another to depend upon when we come into judgment. . . . . .

The following letter from the same source is dated a few months later.

FROM DR. EDWARD HITCHCOCK.

AMHERST, *August* 26, 1863.

. . . . . I STILL linger on the shores of time, balancing, as it were, between life and death, and suffering intensely. Still God mingles many mercies in the bitter cup, and allows me to accomplish several things which I had never hoped to do. I have been able, for instance, to correct all

the proof-sheets of a work of four hundred pages, which I wrote a year or two ago, entitled "Reminiscences of Amherst College," but which I expected to leave unpublished. The work is a good deal biographical and autobiographical, but is intended mainly to give a history of Amherst College up to the present time. I have given a geological map of the region around the College, and three views of the College at different periods. I was greatly indebted to you for your last kind letter of sympathy and condolence, and intended to answer it, but my strength would not allow. Many debts of this kind must remain unpaid till I enter, if I ever do, the house not made with hands, eternal in the heavens. God grant that in such spiritual bodies, without sin, we may hold everlasting communion.

Sincerely and affectionately yours,

EDWARD HITCHCOCK.

Among the many marks of reverence and gratitude which he was daily receiving, the following from a pupil who has acquired a world-wide distinction, deserves to be placed on record.

FROM S. F. B. MORSE, ESQ.

NEW YORK, *February* 15, 1864.

MY DEAR SIR, — A letter was handed me this morning, directed in the well-known hand of my respected and venerated instructor, to whom the American world, at least, is so deeply indebted for the first and most efficient impulse given to science in our country.

I thank you sincerely for the photograph which was within the envelope, and which shows you yet erect and fresh, with more of youth marked in your figure and face than in the enclosed reciprocated photograph, of the boy whom I cannot but think you remember as somewhat wayward and unpromising when your pupil in years long gone by. Yet you see some indications on his breast of foreign

appreciation of benefit conferred on the nations, indicated in the mode by which these nations testify their favorable regard. If the gratification such tokens naturally give to the recipient, pertains in a large degree to me, yet I cannot but think that the *sower of the seed* will himself be gratified at the evidence that the seed which was sown did not perish in the ground. May you yet have many years of health and enjoyment, the glory of your family, and the pride of your State and country.

With sincere respect and esteem,

Your friend and old pupil,

SAMUEL F. B. MORSE.

The reception of two of his grandchildren into the church, gave him much joy.

November 1, 1863. —Admission to the Communion of the Yale College Church, of Benjamin Silliman,' 3d, and his sister E—— (he fourteen and she in her thirteenth year). On this day I had the great satisfaction of sitting down at the Holy Communion with the loved grandchildren named above. They are believed on satisfactory grounds to be spiritually qualified for this interesting step. They are of exemplary lives and conduct, and we trust that their hearts are right with God; and this being the fact, nothing could be more gratifying to myself and my family.

Soon after he records the

Sickness of E——. — But our hopes about dear E—— are fluttering in the wind. She had been drooping for nearly a week before November 1st, and having some fever upon her, Dr. Hubbard, her physician, thought it imprudent for her to attend at the chapel on the day when she was admitted to the church; but her heart was much engaged in the object, and her father took a close carriage, and she

and her brother were admitted. She returned home to occupy a sick-bed, and has remained ever since critically sick with typhoid fever, and the precious life (November 18, Wednesday) still hangs in doubt.

Later, he writes: —

Dear E—— has been spared, and is now hopefully recovering.

Sabbath Morning, July 3, 1864. *Communion Day.* — It is a relief to turn from the recital of battles and daily bloodshed, now occurring in Georgia and Virginia, to the peace-offering of our blessed Saviour, even his own precious blood shed on the cross for our redemption from the pollution and curse of sin. This day, in regular course, we of the College are again to be favored by partaking of the bread and wine, representing the broken body and blood of our divine Redeemer. The longer I live the more highly do I appreciate this great provision made for our redemption. *One o'clock.* — We have just returned from the ordinance. I had the great satisfaction of sitting in the midst of ten members of my family, with, I trust, well-founded confidence that they are members of Christ's family; and I have a hope that I am not excluded. I felt, I trust, a sincere sympathy with all the youthful circle around. It was to me an interesting occasion.

The following hymn was sung: —

"Not all the blood of beasts
On Jewish altars slain,
Could give the guilty conscience peace,
Or wash away the stain," &c.

In the annexed paragraph, he refers to the remarks made on the preceding anniversary of his birth.

August 8. *Birthday. Eighty-five Years.* — . . . There was a solemn impression resting on my mind when I wrote those remarks, and on the reperusal of them and of the accom-

panying prayer, I do not perceive anything to alter. With those sentiments and prayers, I must probably pass into eternity, and it is not improbable it may be in this current year. . . . . I can only repeat that my sole dependence for salvation rests upon the blessed Redeemer, who appears to me more and more precious as I daily approach the period when I shall receive my discharge from this life, to enter on the endless future.

To the mention of the death of Dr. Knight, a pupil and younger colleague, though himself a venerable man, he adds: —

On the founding of the Medical Institution of Yale College, the late Dr. Eli Ives, (obiit October, 1861,) and Dr. Knight, (obiit August 25, 1864,) were agreed upon between President Dwight and myself, as Professors, and Dr. Nathan Smith, was added. I was already appointed ten years before. We four were the first Professors of the Medical School, and the aged and venerable Dr. Eneas Munson was added as a mark of respect; but, as was expected, he never took any active part in the instruction. I am now, therefore, (September 4, 1864,) the sole survivor of the Board of Medical Professors. In addition to those named above, death has removed those named below, — Dr. Thomas Hubbard, Dr. Wm. Tully, Dr. Nathan Smith, Dr.

CHAPTER XXVII.

HIS DEATH: HIS CHARACTER AND SERVICES.

His Last Days. — Circumstances of his Death. — His Funeral. — The Character of his Mind. — His Work as a Man of Science: Remarks of President Woolsey: Letter from Professor Jeffries Wyman: Remarks of Professor J. P. Cooke: Letter from Professor Joseph Henry. — His Services to Yale College and Character as a College Officer: Remarks of President Woolsey: Letter from Professor Thacher: Letter from Professor Porter: Remarks of Dr. Bacon. — His Kindness: Letter from Dr. Charles Beck: Letter from Mr. S. F. B. Morse. — The Courtesy of his Manners: Remarks of President Woolsey: Letter from Rev. George Jones. — His Love of Esteem. — His Domestic Virtues: Communications from Mrs. Church, Mrs. Hubbard, and Mrs. Dana: Letter from Judge S. J. Andrews. — His Impression upon others: Remarks of Professor Wyman: Letter from Professor C. U. Shepard: Letter from Rev. Dr. Sprague.

We now approach the last records in the Diary. After the few extracts which will soon be given, the remaining pages are a blank. Professor Silliman states the origin of the illness, which, quite unexpectedly to himself and to others, terminated in his sudden death.

Sabbath, November 20, 1864. *Neuralgia.* — I attended the College Chapel last Sabbath, November 13, in my usual health, and might have so remained had I not gone out again in the evening. There was a very large audience assembled to hear the statements of four gentlemen, — Dr. Parish, and others, respecting the Sanitary Commission, in relation to the army and the country. The discus-

sion was very interesting, and showed the immense importance of this institution, and of the sister institution — the Christian Commission — to the suffering soldiers, and to the army. So great is the insufficiency of the public provision for sick and wounded men, that the army evidently could not have kept the field but for these institutions, and especially the Sanitary.

The air was so heated by a large audience, in addition to the fires and lights, that when we withdrew, (Mrs. Skinner being with me,) a wintry wind struck me, and the next evening I became a sufferer. Pain seized my chest externally, and became, at the time of retiring, so severe that we used friction, and in the night the pain was transferred to the arms, from the shoulder to the elbows, and became worse than ever. In the morning, after a sleepless night, the pain became seated between the shoulders, and in the back of the head. In the course of the day the pain subsided, but left me unwell; the stomach refused to retain food; some fever supervened, and I became decidedly an invalid. So I remained through the week, and was confined to the house. I am gaining a little from day to day,— with a little appetite, and some power of retaining food. I am not able to attend public worship at present, but am thankful that I am able to employ my time usefully at home. I am warned, by this occurrence, that my health, although usually so good, may be in an instant subverted, and that the call for departure may be sudden, as has happened to Mr. Elton of Waterbury, and others, during the last week. I leave time and manner with my Creator, relying entirely upon Christ Jesus, my ever-blessed Saviour, to rescue me from the power and condemnation of sin.

November 21st, Monday. — I have been able to resume my pen, and am gradually recovering my usual state of feeling. But the shock has been rather severe, and to an old man serious. As the cause is apparent, I must avoid in future the exposure to a cold night air, which brought on

the attack. The next may fasten on the lungs or the heart, and may prove final.

The notices which follow are each connected in the Diary with a paragraph cut from a newspaper. The first relates to Mr. Lincoln's piety.

President Lincoln's recognition of a Saviour and surrender to him. — More to his honor is this brief paragraph than all that his country can bestow. We have ever regarded him as an honest and patriotic statesman, and there were many passages in his writings and in his action that have favored the hope that he is a good man. His truthfulness is transparent, and we have now decided reason to believe that he is indeed a good man.

Death of the Rev. Dan Huntington. — The annexed notice is very interesting to me. I was only two years after him in college life. The annexed notice is, I believe, correct. His early friends will learn with satisfaction that in his last years "he returned with great satisfaction, and was welcomed to the worship and communion of the orthodox church."

He was led to attend the meeting in behalf of the Sanitary Association on Sunday evening, November 13, the occasion of his first attack, partly from the interest he felt in Dr. Parish, whom he had ascertained, on inquiry, to be a son of the Quaker gentleman, who, as is related in the earlier part of this Memoir, had once commended him for declining to go with his fellow-students to Peale's Museum on Sunday. Through the following week, he was confined to the house, but able to receive calls from his friends. On Thursday, the 17th, he had an interview of half an hour or more with Judge Gould of Troy. On Friday, President Day called. A picture

of the New Haven Green, as it was long ago, with the old brick church and adjacent burial-ground upon it, had been brought to Professor Silliman, and they examined the picture together with much interest, marking especially the edifice where, seventy years before, they had spoken their commencement pieces. He said to Mrs. Silliman (who entered the room after the President came in), — "You know I have told you that whenever there was trouble, we were sure to see President Day, and it is so still: here he is; he has come out this unpleasant day to see me." He appeared to yearn for the presence of his son, who had been absent for several months in California. On the 3d of November he had written to the younger Professor Silliman, adverting in the course of the letter — which reached its destination a month after its date, when the hand that wrote it was motionless, — to the affectionate solicitude which the latter had expressed respecting his father's health. In that last letter, he said: "Every day, thanks for your preservation and prosperity ascend from our family altar, with prayers for your safe return. We suppose that you have relinquished Oregon and Vancouver, and that you may be with us by or before the new year. It will be a joyful day when we can again embrace you. I was tenderly touched by what you wrote in one of your letters to S——, in allusion to the possibility of my absence when you return, but we will look forward to a happy meeting here, and hope for a happier one hereafter." Now, the desire to see his son was strongly awakened. On Thursday, a telegraphic message was sent to him, so worded as to hasten his departure without exciting undue alarm.

Afterwards, as Professor Silliman appeared to be decidedly better, a message to that effect was also sent. On Sunday evening, the 20th, he received as usual the group of relatives from the adjacent houses. He said that he needed exercise, and took his cane to walk. In passing the sofa, he took the hand of a little grandchild, and walked with her for some time through the rooms, appearing much interested in his conversation with her. As he resumed his seat he drew her still younger sister to him, and kissing her, said: — "The dear old gentleman is not very strong, and feels too tired to walk any more to-night; he has walked with one dear little girl, and next Sabbath night he will walk with this one." As usual, he had a gentle word for every one. It was remarked that during these last days some kind expression that might well serve for a farewell to each of his near friends, was uttered, seemingly by accident. In truth such kind words, sincere as they were kind, might have been noted on any other week, but now they were not forgotten. On Monday he wrote a letter of condolence to a neighbor, Mr. Wilcox, whose son had died in the war. And on the same day he wrote a note to his aged friend, Miss Whittlesey, who had been his friend from childhood. In the lively letters exchanged between him and early companions, sixty or seventy years before, the name of this lady, a general favorite in the social circle to which both belonged, is frequently mentioned. Now she was ninety-one years old, and very feeble in mind and body. Yet she was able to appreciate the kindness that dictated this letter.

NEW HAVEN, *November* 21, 1864.
Monday, A. M.

To Miss Whittlesey, —

DEAR FRIEND, — Longer time than usual having elapsed since our last call upon you, Mrs. Silliman having been confined to the house mainly for several weeks by a hard cold and cough, and myself by an indisposition for a week past, I am not willing to remain longer silent without conveying a few words of kindness to my good old friend.

Our last direct information of your state was by our dear F——, a little before she left us for her northern home. She reported favorably of your health and cheerfulness, and it is always pleasing to know that as the sun of life approaches his setting, it is not all dark along the edge of the sky, but that a heavenly radiance cheers the evening twilight of life, and gives intimation of a glorious morning to follow. Life is almost past with us; my work is mainly done, and we have little more to do than to wait for our call. Our ground of reliance is familiar to you and to me, and I pray God that we may be able to make the happy application. The provision made by our blessed Saviour in his life and death, is sufficient for all our spiritual wants, as I trust we shall experience when we have passed through the dark valley of the shadow of death. I enclose a little consolatory pamphlet, which has given me consolation in affliction. It opens a bright view of heaven, — imaginative in the scene, but real in the fulfilment of hope.

Affectionately, your sincere friends,
B. and S. I. SILLIMAN.

The tract sent with this letter was entitled "The Awakening," a translation from the German. On Tuesday he felt stronger, and made several calls in Hillhouse Avenue, in the neighborhood of his house. He was anxious to return as soon as possible the visits which he had received during the week previous. In

the afternoon, and on Wednesday, he received various friends who came in to see him, and evinced much vivacity in conversation. An interview with Rev. Dr. Fitch he especially enjoyed. "I showed him," he said, "that anecdote of President Lincoln which I pasted into my Journal last night, and he was affected to tears, and that led to pleasant conversation on religious subjects; we agree entirely." On Wednesday evening, a respected neighbor, Mr. Coit, spent an hour with him. The conversation was animated, relating chiefly to what both had seen at different times in Europe. Early on Thursday morning, he awoke after a sound sleep. He was disposed to conversation, and expressed to Mrs. Silliman his sense of the great blessings he had received in life. He then prayed audibly for the country, — it was the day of National Thanksgiving appointed by the President, — for his family, and especially for his absent son. He repeated the Lord's Prayer, and then the hymns, beginning

"Lord in the morning thou shalt hear,"

"Trembling before thine awful throne."

He seemed much refreshed by sleep, and remarked that his voice was so clear that he could have more extended services in family worship that morning than had been possible of late, and that he could perhaps go out to church. He then expressed to his nearest friend the gratitude and affection he felt for her; and just as the words had dropped from his lips, he drew a long breath, — it was his last. Without a struggle, in a moment, his noble, gentle spirit passed from its earthly tenement. Such a death well deserved to

be called a euthanasia. For many days before, it seemed to all that "heaven shone about him."

The disease of which Professor Silliman died was probably an affection of the heart. The illness from which he had apparently rallied, so that his family were relieved from immediate anxiety respecting him, was considered by his physician to be a manifestation of this disease.

The funeral of Professor Silliman took place on the 28th of November. After a brief religious service at his house, his body was carried to the Centre Church, where for several hours an opportunity was afforded to see his face for the last time. It was observed that the look of remarkable benevolence and sweetness which his features had worn in life did not fade out in death. The public services were attended by a large concourse, including representatives of a number of literary institutions. Prayer was offered by Rev. Dr. Bacon, and a Commemorative Discourse was delivered by President Woolsey.

The traits of Mr. Silliman's mind and heart have been so fully brought to light in the foregoing pages, that on this topic little more need be said. It is not claimed — and he would have been the last to claim — that he had that rare insight of genius which divines the secrets of Nature. Yet no one could have done the work that he did without the possession of more than ordinary powers of mind. His whole turn was more practical than speculative. His perceptions were quick, his judgments sound, and all his mental operations were marked by good

sense. To a vigorous understanding he united a power of application which made him through life a most industrious man. These qualities, together with his rhetorical talents, and the winning features of character and manner that belonged to him, well fitted him for his peculiar work. That work was to collect and diffuse scientific truth. His vocation was that of a teacher. Through the period of his active service he was awake to the progress of discovery. In a letter addressed to Professor A. M. Fisher, before the news of the loss of the *Albion* had reached this country, and which came back to the writer from London, he says: — "I will thank you, when you visit the lecture-rooms and scientific establishments in London, Paris, and Edinburgh, to notice with reference to me, whatever is new and interesting, and to make a memorandum of it at the time. An insulated lecturer is in danger of growing rusty and falling short of the progress of improvement. Should you see any new piece of chemical apparatus, which comes within the means in your hands, I wish you would secure it." In this spirit he managed his department of instruction. Nor is he without merit as an investigator, although his distinction does not lie here. He was never very careful to claim for himself the credit of scientific discovery. At the same time, he took delight in doing honor to the discoveries of others. His first edition of "Henry's Chemistry," appeared in 1808, with the modest announcement, — "to which are added notes by a Professor of Chemistry in this country." As soon as Gay Lussac's method of obtaining potassium by the decomposition of its hydrate by heat in an iron

tube, was known in this country, Professor Silliman repeated the process with success, obtaining potassium for the first time, it is believed, in America.* He was the first to notice and record the effect of a powerful voltaic battery in volatilizing carbon and transferring it from the positive to the negative pole in a state of vapor. His paper on this subject is full of curious interest, and was a long way in advance of the then existing state of knowledge.† Professor Silliman labored zealously with the oxy-hydrogen blow-pipe of Dr. Hare, to determine the fusibility of different substances, and made interesting discoveries in this direction. His investigation in reference to the Weston Meteor has already been mentioned. Such labors indicate that he was not indifferent or inactive in respect to the progress of the sciences which he taught. But his fame rests upon his work as a pioneer, opening the way in this country for new branches of science, and securing for them countenance and respect, and as a teacher who inculcated scientific truth in a way to interest, in an almost unexampled degree, his auditors. His enthusiasm kindled the enthusiasm of others.

"As a lecturer," says President Woolsey, "he was almost unsurpassed. Without a severe logical method, he threw so much zeal into his discourse, expressed himself with such an attractive rhetoric, and supported his doctrine by experiments of such almost unfailing beauty and success, that all audiences delighted to hear him; so that for years no lecturer so attractive could address an assembly, whether gathered within the walls of a college or from

* This was in 1808. See a note in his *Chemistry*, Vol. I. p. 246.

† See Prof. Silliman's Letter to Dr. Hare, *Silliman's Journal*, [I.] V. 108, (1822.)

the people of crowded cities. In his own lecture-room the students felt the genial sway of his oratory. No other such instructions were given, uniting at once pleasure and improvement. Hence for many years the study of chemistry was, perhaps, the most popular one in the institution. In the latter years of his professional life the science of geology seemed to take the largest share of his interest. And, here, the grandeur of the subject-matter seemed especially fitted to kindle and exalt his fervor. The mighty agencies that have moulded the earth over and over, as clay is moulded in the hands of the potter, the immense ages which almost appall the imagination, this vast framework of the earth, the theatre of such sublime displays, and over all, before the eye of faith, the Divine Architect carrying the great building forward, until it had become a fit dwelling-place for his immortal creature, man, — these grand objects inspired him, and he threw the inspiration into his audiences, wherever they were gathered." *

Professor Silliman's lectures in the class-room must have been more effective than academical lectures on science in this country had been before his time. A graduate of Harvard College, whose productions have enriched the literature of the country, writes: — "My liveliest recollections of him are, I think, as a lecturer at New Haven in the autumn of 1814. He showed then a vigor, a spirit, and a freshness of manner to which I had not been accustomed, and which I think I have seldom seen equalled since. His audience, too, which consisted, if I rightly remember, of medical students as well as undergraduates, seemed to have been, as it were, trained by him to profit by his teachings; many of them taking notes, and showing their interest in other

* *Funeral Discourse*, pp. 8, 9.

ways to which I had not then been accustomed in the lecture-rooms of our Professors." * His lectures, as well as the experiments that illustrated them, were prepared with much care. He was never content with merely repeating what he had said and done in a previous year. Each season, in connection with the delivery of his lectures, he took care to read in private some new work upon the science which he was teaching, in order to refresh his mind and assist him to present the subject in new lights. The brilliant success of his popular lectures is abundantly attested. The following letter is from a gentleman whose personal excellence and scientific attainments give weight to his testimony: —

PROFESSOR JEFFRIES WYMAN TO G. P. FISHER.

CAMBRIDGE, *October* 20, 1865.

MY DEAR SIR, — I gladly comply with your wish to offer a few words with regard to Professor Silliman as a public teacher. My acquaintance with him as such was in connection with the Lowell Institute, of which I happened to be curator at the time he lectured. It must be remembered that with this institution began a new era in popular education in this community. Through the munificence of its founder, Mr. John Lowell, it was able to place within the reach of all classes instruction in the physical sciences, in natural history, natural and revealed religion, and general literature, and this from the ablest teachers, and gratuitously.

With the exception of an inaugural address from the Hon. Edward Everett, Professor Silliman was the first who came before an audience under its auspices. Feeling that, among institutions with kindred objects, it had unpre-

* From a letter of Prof. George Ticknor to G. P. Fisher, Sept. 5, 1865.

cedented opportunities for doing good, he often referred to the great responsibility which, under the circumstances, rested upon him, and of the vast importance it was that at the outset the standard of lectures should be made as high as possible. He was unwearied in his endeavors to meet the occasion suitably. Those who listened to him, and saw everything pass off so easily, — every experiment in its place, and almost invariably a success, — knew nothing of the thought and labor which preceded in the preparations. After a quarter of a century, he spoke to me of the anxiety which these duties had cost him.

His lectures on chemistry and geology were given in the Odeon, the largest building in Boston devoted to such purposes, and capable of holding about fifteen hundred persons, and on *his* evenings every seat was pretty sure to be filled. Such audiences to popular lectures on scientific subjects were, it is believed, until then, wholly unknown. They certainly excited the wonder and astonishment of foreign and scientific men who came amongst us. His gifts as a teacher were of such marked excellence that it is not easy to do justice to them. There was a charm in his cordial manner and genial temperament which attracted all, and a sympathy at once grew up between himself and his audience. As he entered the room, they were assured by the dignity of his presence and the earnestness of his manner that his heart was in the work. The best evidence of his power is to be found in the fact that he was able to hold the attention of so large a number for two consecutive hours, with only a short recess, notwithstanding it had become the established usage in the community that a lecturer was expected not to exceed a single hour. The feeling manifested toward him was that of reverence. The refined and educated classes were always largely represented at his lectures; and there are not a few who can fairly trace to the inspiration of these the beginning of a scientific career. It may be fairly claimed that no one in

this country has done more than he, through his popular lectures, no less than his academic courses, to create and foster a love for geology and the physical sciences. Sir Charles Lyell, in his second visit to the United States, says, that everywhere, even in States most remote from New England, he met with those who, having listened to his lectures, had invariably imbibed a love for the subjects he taught. The progress due to his beneficent influence cannot be easily estimated. The influence he exerted, the progress he stimulated, were the work of his life, — a great boon to science.

But, however highly we may esteem him as a teacher and a man of science, there were traits of character which always as deeply impressed those who came in contact with him, but of which it would hardly become me to speak. His benevolence was apparent to all. To benefit another was the natural impulse of his heart. It was easy to see that mechanics and all others — and there were many who in one way or another helped in the preparation of his lectures — became devoted to him at once, never failed to receive words of encouragement from him, and never parted from him but with profound respect. I well remember a little boy who was one of his assistants, whose surroundings had been the most unpromising for anything good. Professor Silliman took a deep interest in him at sight, and, as long as they were together, seemed to have for him almost the solicitude of a father, in doing what he could for his improvement in mind and character. But this was only one of a thousand incidents of a similar nature scattered through a long life.

It was my happiness to spend a short time with him, within a year of his death. It was truly a privilege to see him, in the evening of his days, enjoying the fruits of a life so full of goodness. As he walked through the avenue near his house, there was the friendly greeting to and from all. Hardly a child passed who did not do him reverence,

and receive a kind word in return. The best impulses of the heart which marked him through life were still fresh, and all was peace.

Apart from the useful instruction that was imparted in these lectures, not only to educated people, but also to intelligent mechanics, who heard them, they stimulated individuals to the study of science, who afterwards themselves became proficients in the same branches of knowledge. Prof. Josiah P. Cooke, of Harvard College, concluded his course of lectures before the Lowell Institute, in 1859, with these remarks: —

I should be suppressing a generous emotion, were I not, in concluding, to allude to the very peculiar circumstances under which I have filled this place. With one exception, the only course of lectures on chemistry before this Institution, previous to the one just concluded, were delivered by Professor Silliman, of New Haven, in the years 1839–43. At those lectures I was an attentive listener. Although a mere boy, — one of the youngest of those present, — I then acquired my taste for the science which has since become the business of my life. Returning, after so short an interval, to occupy the place of him who was thus unconsciously my instructor, — I might add, my only instructor in chemistry, — I know of no way in which I can pay a higher tribute to his worth, or to the usefulness of this noble charity, of which he was only the almoner, than by a simple statement of these facts. If, in future years, students of Nature shall arise, who can trace back their earliest essays in science to any humble influence of mine, I shall feel that my labor has been more than rewarded, and that my efforts have been crowned with success.

The habit of addressing popular audiences had an

influence upon his method and style as a lecturer in College. He indulged in more digression than had been his custom in earlier days. He took delight in alluding to his friends and scientific contemporaries, and in interweaving observations and anecdotes not strictly belonging to the topic under discussion. He was aware of this peculiarity, and in the book in which he recorded the briefs of his lectures, which was kept in his laboratory, he repeatedly, at the termination of his courses, censures himself in this particular and writes down a caution for his own benefit in the future. Thus in his comments upon the chemical course of 1843–4, he says: — "Digressions and extraneous remarks — less frequent and extended than heretofore, but there is room for more compression and suppression." If this habit detracted from the scientific value of his lectures, it probably caused them to be heard with increased interest by the most of his pupils.

The practical utility of science was always kept in view by Professor Silliman. He looked upon scientific truth as a means of promoting human comfort and happiness. Hence he desired to carry his knowledge to those who were engaged in manual labor. Reference has been made on a previous page to his coöperation with Mr. Brewster in efforts for the instruction of the working men of New Haven. This gentleman remarks: * — "Professor Silliman ever evinced a deep feeling of interest in the moral and intellectual improvement of the mass of the people. Prompted by his encouragement, I erected Franklin Hall for the purpose of providing instruction in the

* In a letter to Professor Dana, dated November 26, 1864.

elements of mechanical science to those who could not attend lectures in the day-time. He assisted me in obtaining the means to illustrate the experiments to be made, and introduced me to his Assistant in Yale College, Mr. Charles U. Shepard, who assumed the position of curator of Franklin Hall. Professor Silliman and Professor Olmsted gave courses of lectures to the people of this city. The beneficial effects were manifest by the erection of steam-engines, and the perfecting of machinery, greatly aiding in the development of mechanical skill in its application to the useful arts. These benefits have long been manifest in all departments of business. This was the first time, I believe, that College Professors had gone out to lecture to the people upon natural and mechanical science."

One who does the work which Professor Silliman did for the cause of science, is, perhaps, liable to receive less than justice from those who come after him. The branches of knowledge which he has cultivated attain to so high a grade of progress that the period of his activity is looked upon as a day of small things. Mistakes and deficiencies, inevitable in the infancy of a science and specially natural to one who is performing the work of a pioneer, are liable to be magnified beyond their just importance. But liberal and thoughtful minds will not be betrayed into the error of undervaluing the arduous work which paves the way for a long era of progress; nor will such minds be inclined to carp at the labors of men to whom they owe so large a debt. When the duration of Professor Silliman's career and the varied channels in which his scientific exertions were directed,

are taken into account, the sum of his influence will be seen to have been vast. "Among the pupils of half a century," says Professor Caswell, "how many have caught the enthusiasm of the master, and given their energies to science, and placed their names high on the list of its honored cultivators! How many hundreds and thousands of those who in different cities have listened to his eloquent lectures, have learned to appreciate science, and gather refined pleasure from its culture, and give to it their hearty patronage! How regularly and how widely has his Journal carried to the reading public intelligence of the latest discoveries, and the best practical applications of science! Considering all this, who shall say that his efficient influence has not been felt in every institution of learning, in every profession, nay, in every workshop, and every cultivated field, in this broad land of ours!"*

The usefulness of Professor Silliman, as a scientific man, is properly set forth in the following letter from a gentleman, than whom no other is better entitled to represent the science of the country.

PROFESSOR JOSEPH HENRY TO G. P. FISHER.

SMITHSONIAN INSTITUTE,
November 13, 1865.

MY DEAR SIR, — Your letter requesting me to give my impressions of the life and services of Professor Silliman, and of the effect of his labors on the progress of knowledge in our country, with reminiscences of a personal character, was received at this Institution during my absence, and I now embrace the first opportunity since my return to comply with your request. I have, however, to

* From a Memoir of Professor Silliman, read before the National Academy of Science, January 25, 1866.

regret, that neither my time nor power of expression will enable me to do justice to the subject. I hope, nevertheless, that my communication, such as it is, may not be too late for the object intended, for I should be sorry to lose this opportunity of bearing testimony to my high appreciation of the character of our lamented friend.

I must leave to others to give an account of the details and features of his every-day life; for, although I flatter myself that I shared his friendship, and know that on different occasions, and in various ways, I experienced his kindness, yet my personal intercourse with him was casual, and only at considerable intervals of time. My first knowledge of Professor Silliman, beyond the occasional hearing of his name, was derived from reading his "Travels in England and Holland." The manner in which he described what he saw and experienced in his visit to Europe, at a time when visitors from the New World to the Old were far less numerous than they are now, and the candor and kind feeling which he manifested, awakened in me, at a time of life when I was most susceptible of impressions, a warm sympathy with the traveller, which rendered him an object of special interest, and was destined in time to be developed into friendship and admiration by a more intimate acquaintance with his character.

I carefully traced his route on the map, and gave such attention to his statements, that many of the scenes which he described, and the incidents which he related, still remain on my memory, without a renewal of the impression, after the lapse of many years. This book was very popular with all classes of readers in this country; the copy which I read was met with by me in an ordinary farm-house in a neighborhood in which I was teaching a district school, and gave evidence, in its worn condition, of having been frequently perused. From the candor of its statements, and the spirit which it evinced, this work tended much to soften the asperities of feeling which existed at

the time of its publication between England and the United States. His "Travels in Canada" was also perused with like interest; and, from its first appearance till the present time, I have been a constant reader of the "American Journal of Science," and from each succeeding number have derived instruction and pleasure.

The first time I saw Professor Silliman was on the occasion of a visit to New Haven in 1830. I need scarcely say that although I had formed an exalted opinion of his character, he more than realized, in personal appearance, in general bearing, and in fascination of manner, the high ideal which I had conceived of him. He exercised, at that time, a wide and commanding influence on the science of the country, — gave dignity to its pursuit, was the eloquent expounder of its principles, the able advocate of its importance, and its defender against the denunciation of zealous, though narrow-minded theologians; and that too with an humble and devout acceptance of the essential truths of Revelation. The highest generalizations of science, though of inestimable value in the way of the classification, the prediction, and in some cases of the control of the operations of Nature, are yet but approximations to truth, provisionally adopted, and continually subject to modification and restatement with the progress of discovery, and the ever-widening horizon of knowledge; while the propositions of Revelation, although so plain in their moral bearing, that the "wayfaring man, though a fool, need not err," in their scientific aspect require, for elucidation and proper interpretation, the most profound learning of the past, and all the lights which the present and the future can afford. In such a condition of affairs, surely humility and tolerance are both required in order to a harmonious coöperation of religion and science in the great work of human improvement.

He was the first to introduce in this country public lectures illustrated by experiments on a scale of magnitude,

and of a character to interest a popular audience; and his success in this enterprise was such as to give an impulse not yet exhausted to a means of adult instruction which, though it has been abused, is well calculated under proper regulations to effect much social and personal good. As a popular lecturer he was, at the time of which I speak, one of the best I have ever heard. To the advantages of a commanding figure, a pleasing and expressive countenance, of ready elocution and correct literary taste, he added great skill in experimental manipulation and ingenuity in presenting and illustrating the prominent truths of geology and chemistry, and never failed to enchain the attention of his hearers, and to awaken in their minds emotions not only of intellectual pleasure, but also of moral enjoyment. I can say, at least, most emphatically, that such was the impression produced upon myself by the lectures which I heard him deliver to the Mercantile Library Association of New York. In these lectures he evidently shared with his audience the pleasure of the occasion; he was not only full of his subject, but manifestly delighted in its exposition and illustration. Another trait of his character displayed, was the enthusiasm with which he dwelt upon the scientific labors of his own countrymen, the desire he exhibited to place, in a favorable light, what they had accomplished under the difficulties and discouragements incidental to a new country; and to claim for them the sympathy, encouragement, and the support of his audience.

The establishment and maintenance of the "American Journal of Science," under restricted pecuniary means, was an enterprise which involved an amount of thought and of labor for the expenditure of which he has well merited the gratitude not only of his own countrymen, but of the world. It has served not only to awaken a taste for science in this country by keeping its readers continually informed of the discoveries in science wherever it is cultivated; but above all, it has called into the field of original observation and

research a corps of efficient laborers, and has furnished a ready means of presenting the results of their labors to the world, through a medium well suited to insure attention, and to secure proper acknowledgment for originality and priority. Nor are the results which have been thus evoked few or unimportant, since many of them relate to the objects and phenomena of a vast continent almost entirely unexplored, in which Nature has exhibited some of her operations on a scale of grandeur well calculated to correct the immature deductions from too limited a survey of similar appearances in the Old World. For conducting such a journal, Professor Silliman was admirably well qualified. He occupied a conspicuous position in one of the oldest and most respectable institutions of learning in this country; he was intimately acquainted with the literature of science; was a fluent, clear, and impressive writer, an accurate critic, and above all, a sage and impartial judge. It is almost impossible, without actual experience, to form an adequate idea of the amount of labor and absorption of thought required to properly conduct a journal of this character. It is essential to its success that it should appear, without fail, on the day fixed for its publication, and in order to this, that a supply of suitable matter must be always in preparation in advance. On this account the permanent collaborators must be continually urged to punctuality in completing their allotted tasks, and every tendency to procrastination in all connected with the enterprise persistently counteracted. The proof-sheets must be critically read, and the accounts of the paper-maker, the printer, and the binder, carefully audited. Though some of these details may be delegated to others, yet, unless the proprietor himself keeps a watchful eye on the whole, he may soon find himself involved in difficulties of a very disagreeable nature. But this is not all; nearly every article presented for publication calls for a correspondence between the editor and the author; it frequently happens that certain points need further eluci-

dation, errors demand correction, and in many cases statements and opinions, especially those which might lead to controversy, require modification. The editor is also responsible for the scientific character of the articles admitted, and the selection of these is frequently, not only a matter of delicacy, but also of difficulty, lest the self-esteem of a sensitive author be too deeply wounded, or the first effort of a youthful aspirant to scientific reputation too rudely repressed. In reply to some remarks on an article of less scientific merit than the general standard of the Journal, Professor Silliman once said to me, — "Could you see what I reject, and the amount of correspondence which such rejection involves, you would not be surprised that I should occasionally suffer an article to appear not strictly in accordance with my own views. I try, however," continued he, "to express disagreeable truths in language as little offensive as possible; to encourage beginners, and to elicit observations of natural phenomena even from those who make no pretensions to science." This was a judicious course, since thousands of valuable facts, palpable to every one, present themselves in the field and in the workshop, and are suffered to pass away for want of a proper record which might serve to fix them as elements of future generalizations. Though it has been the aim of the editor of the "American Journal," to thus gather up and preserve the minutest materials of scientific knowledge, yet the work has always maintained that dignity of character which becomes its important mission, and that strict impartiality which alone is compatible with the advance of truth.

Through his instruction of a large class of admiring pupils, collected from almost all parts of this continent; through his hospitable attention as a citizen of New Haven to the many visitors of that beautiful city; through his public lectures, and by means of the Journal, Professor Silliman became more widely known, and more highly appreciated, than any other man of science in this country;

and his influence, which was fully commensurate with his reputation, was freely given to whatever tended to improve humanity and to promote religion. He was without ostentation, and his actual acquirements as well as his self-respect left no room for pretensions to universal knowledge. He affected none which had not fallen within the scope of his mature and proper studies. Hence he was ever ready to receive information from any source which could supply it; while he never failed to gratify the teacher, whoever he might be, by the deportment of an attentive and interested listener.

His labors as a teacher and an editor were too absorbing to allow him to devote much time to original research; what he did, however, in this line, gave indications that more important results would have followed had his energies not been applied in the way in which the more immediate and more urgent wants of his country had directed them.

It frequently happens, and perhaps too in accordance with a general tendency, that the professed teacher falls behind the actual state of the science of his day; while on the other hand the visionary speculator attempts vain excursions into the future, and by projects which are at the time premature, if not entirely chimerical, only injures the cause he has unadvisedly assayed to advance. Professor Silliman fell into neither of these errors, but was emphatically the man of his time, acting in accordance with its spirit and laboring so to direct its energies and to control its tendencies as to render the world wiser and better. His whole career was prosperous in a remarkable degree. The part he was called to act in the drama of life was well adapted to his mental and moral peculiarities, — was well timed as to the scientific condition of his country, and admirably well performed. Though professionally occupied with the consideration of material phenomena he was thoroughly imbued with the subordination of these to the

spiritual essence of our nature, and though industriously devoted to the duties of life, his views and aspirations were not confined to this sphere of existence, but extending beyond time, constantly mingled with the events of the present the condition of the future through the hope and faith of an humble Christian.

The services rendered by Professor Silliman as an officer of Yale College, independently of the direct benefit of his instructions, were of the highest importance. His name and fame attracted students. His influence secured benefactions.

"His personal presence," says President Woolsey, "his great popularity, his fine powers of persuasion, caused him to be put forward whenever there were wants to be urged before the legislature or before private friends, whenever strangers of distinction were to be honored, whenever on academic festivals responses were due from the authorities of the Institution. There were, I believe, in the universities of the Middle Ages orators annually appointed who represented their communities on public occasions. He, in his prime, was our standing orator, the principal medium between those who dwelt in the academic shade and the great public.

"A very important duty of Professor Silliman grew out of his function as a member of the College Faculty. For more than fifty years he sat and voted in that Faculty, aided in discipline as well as instruction, and being the senior Professor, had a prominent place in all Faculty measures. Dr. Dwight, without doubt, would not have selected him for the new professorship, unless his clear eye had discovered in him the power of governing and controlling; and his career as a tutor must have been satisfactory. When he took the Professor's chair, no especial part of the College discipline fell on him; he had no care of a division, and

hence had less direct and intimate contact with the students than most of the other officers exercised. It was natural, therefore, that he should think less of rules than those whose business it is to enforce them. But his influence was all exerted in favor of discipline and order, and especially where insubordination and combination to resist law was rife, — as happened more than once between thirty and forty years ago, — he was a tower of strength to the government. His influence again, as a man, upon those students whom he knew, or who were committed to his special care, was often exceedingly happy. It is but a few months ago that a gentleman of high standing in one of our large cities told me how Professor Silliman had saved him from waywardness and disgrace, and how an attachment was thus begun which had never been weakened. Many such ties were established with young persons who are now prominent men in various parts of this land, and who, when they get the news of his death, will feel that a guide and a true friend has passed away."

The conscientious and religious spirit which guided him in his official work may be seen in the annexed memorandum, written on one of his birthdays nearly forty years ago. It was during a period which was unusually marked by disturbances in College.

Sabbath Morning, August 8, 1830. — . . . . . Among the painful things of the year, one of the most conspicuous is the secession of nearly one half of the Sophomore class from their duty, ending in open rebellion, and the exhibition of very disrespectful language and conduct to their late instructors. They have attempted to menace us with a league not to return unless their dismissed classmates, three in number, shall be restored. We on our part, have come to the painful but necessary decision that none of these youths — forty-three in number — shall ever return to the Institution. This event, especially as it is the third of the

kind since August, 1826, should admonish us to be vigilant, discreet, and faithful; uniting energy with kindness, and always asking wisdom of Him who is able to direct. These events should prevent us from feeling any pride that Yale College has flourished so much; we see that its prosperity may be blasted; public opinion may turn against it, and its overflowing numbers may dwindle to a small band. I am not apprehensive, however, that public confidence will be withdrawn on account of this event. I have no doubt the public will vindicate us, but they will inquire why these created rebellion; the answer is found in the inflammable materials that are accumulated here, partaking too much — as regards a considerable portion of our youth — of the factious, insubordinate, and ambitious spirit which is so strongly manifested in our public affairs. If the College government should be overpowered, it would be from this cause. This country is literally swayed by a democracy of greater extent and power than ever existed on earth, and its spirit infests our seminaries of learning. We, however, have only to go on undeviatingly in the discharge of our duty, and trust the event with Him who rules the destinies of nations. In my own particular case, I feel more and more both the propriety and necessity of perfect and habitual submission to the Divine will; of more vigilance and faithful self-control, that all my thoughts, affections, words, and conduct may, as far as possible, correspond with the divine example of Christ, who was pure, holy, harmless, and undefiled. Not that I think that I can earn salvation by my poor obedience, constantly marred by sins and imperfections; but, it is presumptuous to relax in our efforts; we have no right to live carelessly, or in known sin, and then throw the burden of sin on Christ; we should labor as if it all depended on ourselves, and still remember that our salvation is not of debt, but of grace.

As might be conjectured from the mildness of his

character, he was, especially as he grew old, generally disposed to lenient measures against offenders. But incivility of manners towards a superior, insult and injury offered to younger students, and falsehood, he was prompt to punish. For, though so amiable in temper, he was a high-spirited man, quick to perceive and to resent every sort of meanness. He was honored and loved by his pupils to the end. One of the younger graduates of the College, a candid and discerning judge, after adverting to his "too genial discipline and his discursiveness at times in lectures," adds the remark, — "there was among all of us a very deep feeling of love and admiration for him, and of pride in him." *

Two gentlemen who were associated with Professor Silliman, both in the relation of pupils and of colleagues in the College Faculty, have kindly communicated their impressions of him as a College officer.

PROFESSOR T. A. THACHER TO G. P. FISHER.

My dear Professor Fisher, — The first time I remember to have seen Professor Silliman was the morning of the 13th of September, the day before Commencement in 1831. He was presiding at the examination of candidates for admission to College, and I was one of the candidates. The impression which he made on me then, as to his personal and social traits, respecting which you inquire, was never essentially changed during the long period of our personal and official intercourse. He seemed to wear with perfect naturalness and ease the character of a gentleman. He showed the same urbanity, the same considerate-

* From a letter of Hon. Andrew D. White, of Syracuse, N. Y., to G. P. Fisher, September 8, 1865.

ness, the same play of spirit, and withal the same unoffending frankness which appeared in him to the close of life. I had forgotten to bring testimonials of character from the preparatory school which I had attended, and ventured to refer him to one of the College tutors, who, with the exception of the last preceding year, had been one of my teachers in the school. "Ah," said he with a smile, "you may have lost your character since that teacher left your school." During the same examination, I remember that he was not deterred by my standing within hearing distance, from distinctly but politely reproving a tutor for spitting from one of the windows of the gallery of the chapel, where the examination was held. Nor was he satisfied with the tutor's reply that he had been careful to look before committing the act; for it was the act which offended him, as much as the danger of passers-by. He would have set up in every public place the *in hoc loco despui religio est.*

Professor Silliman's method of examination was different from that of Professor Kingsley, whose presence on that occasion I also vividly remember. He was inclined to form a general estimate of a young man's promise by the indications which were more obvious. Professor K. on the other hand, seemed to have the faculty of quickly opening a shaft into the very being of a man, and seeing what was in him; and his work was soon done, unless he was either detained by a kindled interest in the personality of some bright-minded candidate, or by a desire, in the case of some other, to find the evidence of fitness, which was not at first apparent. Both of them were rather disposed to overlook deficiencies as far as it was by any means proper to do so, and as years went on they grew uneasy under the gradually increasing stringency of the examination.

My earlier memory of Professor Silliman is very much associated with that same chapel, for it was not until I was near my degree that I came under his instruction in science. He for many years officiated at prayers every Sunday even-

ing, and with other Professors attended in the chapel many other evenings in the week. His manner in the desk was, on the whole, I should say, prevailingly rhetorical, and is probably more distinctly remembered by the multitude of his pupils than that of any one of his colleagues. He was quite rapid, so that he almost produced the impression that he would lose no time; but he spoke with a full flowing voice, with rising and falling tones which were sometimes perhaps a little extravagant, but always delightful for their melody. It is easy to recall with what unction and swing he used to read his favorite hymns, such, for instance, as the one, peculiarly appropriate to Sunday evening, which begins —

"Frequent the day of God returns,"

And ends with the stanza, —

"Where we in high seraphic strains
Shall all our powers employ,
Delighted range the ethereal plains
And take our fill of joy."

Or the one beginning, —

"Stern winter throws his icy chains."

He was more accustomed than others also to adapt his selections, whether of hymns or of Scripture, to the time, the seasons of the year, or public occurrences, or the events of our College life. In prayer his mind was fertile, and his petitions sometimes unusual. A stranger would hardly have discovered in his public devotions how profound was his habitual reverence for the Supreme Being. You know with what affectionate reverence he was accustomed on more private occasions to draw near to God as his only sufficient friend. I have hardly in my life been more touched by the utterances of a Christian man than I was by some remarks on the subject of prayer made by him in one of the latest years of his life at an evening meeting for religious instruction and worship in the President's lecture-room. We could see, from the words he addressed to us,

how he, now past fourscore, was in the habit of coming to God with the simplicity and frankness, and dependent spirit of a child, acknowledging all his faults and weaknesses, as well as sins, unveiling his whole life with all its hopes and fears as in the confidence of secret love, counting nothing which affected him too insignificant to whisper into the ear of the Almighty Father.

But to return for a moment longer to the chapel; you know that the students at the close of the services always waited respectfully for the Professors to pass between their ranks and leave the house first. The President was wont to attend prayers in the morning only. Professor Silliman took the lead, receiving the bows of the Seniors and Freshmen successively with all the stateliness and easy grace of a man born to head a procession. Professor Kingsley came next, indicating by his whole bearing that in his soul he had no inclination to pomp. And yet if any breach of decorum occurred as they passed along, the latter would be more prompt than the former to rebuke it on the spot. These two were followed by Professor Goodrich, and sometimes by Professor Fitch, and then Professor Olmsted. How much of the very character of these College men was indicated by their manner, as they thus passed down from the desk to the door of the chapel! But they all have long since ceased to be seen there. For years there has been no man in the whole Academical Faculty of the College who was in it when I presented myself for examination as I have described above.

As a colleague in the Faculty, Professor Silliman was courteous and unassuming, and was willing to take his share of the labor and responsibility of discipline in all serious cases, either of special offence, or of general disorder by day or at night. He was quite ready to administer personal rebuke to students who were improper in their behavior, and would sometimes with no little warmth, request that those, for instance, whose improper attitudes during worship

on the Sabbath had attracted his attention, should be sent to him for private admonition. On the other hand he was somewhat impatient of rules against petty offences, and reminded us that he had protested against the adoption of the system of rules which culminated in dismissing from College every student who incurred twenty marks for absence from College exercises in a term.

Toward the younger members of the Faculty, those who had recently come from the rank of pupils, where they had looked up to him with reverence, his considerate bearing was such as to make them feel at home in their new and delicate position. He at once called them his colleagues in the grave business of the instruction and government of the College, and seemed disposed with unaffected sincerity to take them to a full equality with himself as such. Not that there was any want of this respect on the part of others toward the younger officers, but he was more carefully demonstrative. So when any tutor announced his purpose of soon laying down his office, Professor Silliman almost invariably improved the opportunity to utter some complimentary word, and to express his regret that the services of the retiring officer should cease.

There was one thing which may be mentioned in this connection, interesting in itself and also as illustrating further the traits of character in Professor S., of which I have spoken. I refer to the marked respect and affection with which he invariably spoke to and of his only senior colleague. This was very observable from the earliest time of my association with him, and continued to the close of life, and it was the more striking from the fact that that colleague was only one year before him as a graduate, and was appointed to a professorship in the College at the same session of the Corporation, at which he was himself made Professor of Chemistry. But the truth is, the very nature of Professor Silliman found enjoyment in the manifestation as well as the entertainment of such feelings. He met all

his friends with an expression of genuine pleasure at the meeting. His presence in any circle kindled a pleasant warmth, and shed an additional brightness; and his disappearing from this academic community in which he was through so long a life an essential element, is like the going out of a cheerful and cheering household fire.

There are many other things which I might say, but I will not prolong my letter, already perhaps too long.

FROM PROFESSOR NOAH PORTER.

My first knowledge of Professor Silliman was in 1827, when he examined me in Geography for admission to Yale College. He was then forty-eight years old, tall, erect, of a fair complexion, and with benignant expression, carefully and even elegantly dressed, very dignified, and yet very attractive in his manners. I was greatly impressed by the extent of his knowledge, the rapidity of the movements of his mind, the affability of his address, and the great kindness of his heart. He was the presiding officer of the Board of Examiners at that time and for many years, and there are doubtless hundreds of the graduates of the College who can recall similar impressions of his graceful dignity, and his unaffected kindness, on an occasion which is always memorable and trying. The next occasion, when he made a very strong impression upon my thoughts and feelings, was at the delivery of a few familiar lectures to the class, not many weeks after our admission to the College. We were summoned to the laboratory,— to us a most mysterious apartment, made impressive by the manifold and multiform arrangements of furnaces, retorts, and crucibles, — to hear the Professor discourse to us, in respect to the College life to which we had so recently been introduced, — the life so peculiar in its evil and its good, — and advise us in respect to our manners and our morals. The topics of his lectures were miscellaneous, — our personal habits, our diet, our sleep, methods of study and reading, the use of tobacco

and of strong liquors, the moral exposures in student life, our safeguards, &c. These topics were treated by the Professor in his usual manner, — fluent, self-possessed, rapid, varied, often digressive, sometimes mirthful, and then grave and serious. At times, — especially when describing the ruin of some promising youth, or the desecration of the Chapel by daring mischief, — his soul would be moved with grief, and his eyes would fill with tears. These lectures made a very strong impression upon the class in respect to the matters discussed; but most and best of all, they left one still stronger, — of the kindness of the Professor, and of his earnest desire to promote the welfare of the students.

He took his turn in officiating at evening prayers on Sunday, and his well-remembered phrases and intonations in reading the Scriptures, and in prayer, would remind us of his sincere and unaffected piety. It was always impressive and elevating to hear him pray in the College Chapel. On occasions of night disturbances about the College, Professor Silliman was prompt and active, and the students believed that he was the determined foe of mischief and dissipation. By these methods, though he gave no instruction to the members of the two lower classes, his presence and influence were felt by all, and his character was influential, well understood, and highly appreciated by the whole community.

At the beginning of our Junior year, we attended a part of his course of chemical lectures. It was a memorable time when we were permitted to go to the laboratory to hear Professor Silliman, and witness the experiments. The manner of the Professor was free, self-possessed, and rapid. His matter was clearly conceived by himself, but not communicated after a very strict method. He assumed so much knowledge on the part of the hearer, that he touched many points too lightly, glanced at them too rapidly, and digressed too frequently to make his lectures very valuable as a philosophical discipline. The great principles of chemical

science were, however, very distinctly impressed upon our attention, and the properties of the most important elements, and the laws and effects of their combination, were familiar to our thoughts, by the brilliant and attractive experiments of the eloquent expounder. His treatment of the practical uses of some of the more familiar, as of the use of silex in glass-making, and of alumen in pottery, were very instructive and interesting to every ingenious mind. His many digressions might be open to objection when tried by the rules of a severer method, but they served the important office of stimulating and enlarging the minds of his hearers. The incidental influences of Professor Silliman's lectures in this regard were, perhaps, more valuable than the knowledge which he imparted.

In our Senior year we heard his course in chemistry in full, as also his course in mineralogy and geology. The last was the most exciting of all, and at a period still later than this, these lectures were more brilliantly illustrated by specimens and drawings, and they became still more attractive. In them all, he was the same bland and polished gentleman, exerting a powerful influence for good by his very presence and manners, and quickening the intellects of his admiring hearers by the many points of truth which he suggested, and the vast number of relations which he brought to view.

I was tutor in College from 1833 till 1835, at the time when Professor Silliman entered upon that course of active labor which he enjoyed so greatly. About that time the relation of the discoveries of Geology to the truth of the Mosaic record, attracted public attention, and I well remember with what ready confidence he undertook to explain the difficulties involved, and to reconcile the discrepancies which were supposed to be irreconcilable. The students of theology proposed the discussion of the subject in their debating society, and Professor Silliman was invited to join in the debate. He very willingly assented,

and entered the lists with his recent pupils, with all the ardor of a young student; never embarrassed, however hardly he might be pressed; always ingenious, however skilfully he might be assailed; frank to confess his want of acquaintance with some of the principles of evidence and argument, which his logical antagonists brought against him, but challenging their explanation of the multitude of facts which he so fluently recited and so eloquently enforced.

I was acquainted with Professor Silliman, as his colleague, from 1847 till the time of his death, being, during all this time, a very near neighbor, seeing him in the most familiar and sacred relations of life. He was the same to the end. After he remitted the active duties of his profession, he gave himself up to reading, to writing, and to social intercourse. Conducting his life, in all particulars, after a system such as would be annoying and burdensome to most men, but which was natural to one who dignified everything that pertained to himself, even the minutest acts and events.

As a College officer, Professor Silliman was conscientious and faithful. He never shrunk from any labors or duties which the College required at his hands. His whole heart and being and pride were in the College. He did not interest himself in all the details of its management and discipline, for he wisely judged that he had less capacity than some others to direct and act as the exigency might require. He was at times, perhaps, too careless of detail and routine, inclined to be lenient when severity was imperatively demanded; but he was always true to the government, and sustained it by his dignity, and not unfrequently his stern rebuke. In what was called the Great Rebellion of 1828, he was very prominent in sustaining the most vigorous acts of the College Faculty, as well as active in reclaiming those who had committed themselves to the wrong. He was a swift witness against vice and profligacy, in all their

forms. His mildness and benignancy of temper gave to his rebukes additional point and power.

In some repects it was unfortunate for Professor Silliman that he gave instruction by lectures only. It is not surprising that he preferred to lecture, and that he judged that this was the best method of teaching chemistry. It was taught in this way in the Scotch Universities when he studied, and he very naturally received the impression that it could be taught in this way with the greatest success. Indeed, the necessity of performing experiments seemed to make lectures necessary. Professor Silliman's own aptitudes and inclinations would, of course, lead him to prefer this as the sole method. Had he examined his classes with greater thoroughness, had he oftener asked himself what was the best method of impressing and receiving the principles and facts which he set forth, and held himself rigidly to the rules which, in this way, he could not but have formed, he would have imparted more knowledge and secured a more thorough discipline, though he might have been less attractive as a lecturer. However, the methods which were most natural to himself were, on the whole, the most useful to the world, at the time when he was most active and laborious. That he was active and diligent as a reader and student, no man could doubt who was familiar with his daily life, or knew the extent of his labors and responsibilities. For many years the sole responsibility of conducting the "Journal of Science," and of sustaining its pecuniary liabilities, rested upon him. His correspondence with relatives and friends, both scientific and social, was always very onerous, though it was to him a pleasure. His reading was very extensive. In the rapidly advancing science of chemistry, and in the rapidly opening science of geology, there was the necessity of constant activity, and of the power of readily acquiring and thoroughly mastering the new discoveries and the new theories. He delivered a lecture almost daily for more than thirty weeks of the year,

superintending the preparation for his experiments, and the arrangement and repairs of his apparatus.

After adverting with just praise to other personal traits of Professor Silliman, especially his kindness to the poor and his patriotism, Professor Porter closes with a reference to his religious character.

His religious character was in harmony with himself. He received without questioning those views of the truths of the Scriptures which had been received by his ancestors, very much as they were held by his revered friend and companion, Dr. Dwight. The grounds on which he rested his faith in them were rather the fruits which they had produced in the great and good men of New England, than any very profound theological reflection. He had seen much of the Protestant world in his early manhood and was sufficiently satisfied with the practical workings of the faith of the original churches of New England, to make their faith and piety his own. His habits of private and domestic devotion were most exemplary. He always witnessed a good confession of his faith in, and reverence for, the Divine Redeemer, whatever might be the society in which he was cast, whether believing or disbelieving, and wherever he was, whether at home or abroad, whether on the land or on the sea. To do less than this would have offended against the sentiment of loyal courtesy towards the purest and most exalted of his friends, as well as the Divine Ruler, Redeemer, and Judge of men. It was his pleasure and his joy to labor in this way for the diffusion of Christian faith among men. It was in beautiful keeping with the movements of his being and aspirations of his soul, that he breathed out his life in an act of humble thankfulness to God for his goodness to himself, and in a warm and affectionate expression of love to his nearest earthly friend.

In connection with these remarks from the col-

leagues of Professor Silliman, the observations which were made by Rev. Dr. Bacon at a meeting of the Connecticut Academy of Arts and Sciences, will be read with interest. The meeting was devoted to the consideration of Professor Silliman's character and work, — Professor Lyman being in the chair. The letter of Rev. Dr. Porter, of Farmington, which is given on a previous page of this Memoir, had been read, and to this Dr. Bacon alludes at the beginning of his remarks.

The letter which has been read recalls vividly to my mind my first personal interview with the venerable writer. When I graduated, forty-four years ago, Dr. Porter, of Farmington (though nobody had then begun to offend his modesty by calling him Doctor), seemed to me almost as old as he now does, — though it is a mathematical truth that he was much younger, being only seventeen years out of College. Having become myself a graduate, and having settled up my worldly affairs in this place, I set out the day after Commencement, with my College room-mate, on a pedestrian journey to Hartford, which was then my home; and, being in no hurry, we took the longest road, by way of Farmington, not having walked that road before. We took the liberty of calling on the minister of Farmington, and had a kind reception. Talking about College and Commencement, he told us our advantages had been far greater than his, because it was his misfortune to pass through College just before the great improvements in the course of studies, — a misfortune which it now seems to me has befallen many of us, for great improvements in the course of study have been of frequent occurrence within my memory.

Two of the long-forgotten things mentioned by Dr. Porter remained in my day. One was the inauguration

of tutors by the ceremony of a public assent to the Confession of Faith and Form of Church Government agreed upon by the Saybrook Synod in 1708, — a method of inauguration which was used while I was in College, and sometime afterwards, except when the tutor elect happened to be an approved dissenter from that form of government, in which case the ceremony was dispensed with. The other was the use of Morse's "Geography" as a book to be recited, of which I have a feeling remembrance to this day, — remembering well the bulk of the volumes, but too little of what was in them. I find myself, therefore, to have passed through College just at the era at which Dr. Porter thought he passed through, — namely, when the great improvements were about to be introduced; for my classmate, President Woolsey, was the last tutor inaugurated by the ancient ceremony, and I think my class was the last that recited the "Geography." (Professor Lyman here remarked that the study was discontinued in 1825.)

I remember vividly the first glimpse I ever had of Professor Silliman, whose name I remember from my early childhood. It was in Hartford, just after the close of the war with Great Britain. One of the first fruits of the peace, — at least one of the first to make a deep impression on a boy of thirteen years, — was, that a queer-looking foreigner, an Italian, I believe, with English words enough to buy and sell, — a strange personage in those times, — came along, and opened a shop for a little while in Hartford. He had in his window what seemed a wonderful assortment of prints, some of them representing famous buildings. But what was a still greater attraction to the school-boys, he sold torpedoes, — little wads of paper filled with fulminating powder, and exploding without fire when thrown upon the ground. I was gazing at that attractive shop-window one day, when two gentlemen, passing along, stopped for a moment. One of them was Mr.

Wadsworth of Hartford, whom of course I knew. The other was a stranger, whose manly strength and beauty of person and ruddy freshness of countenance were in marked contrast with the thin features and attenuated form of Mr. Wadsworth. They looked at a print in the window. "Do you not recognize it?" said Mr. Wadsworth to his companion. "Oh yes," was the reply; "it is Guildhall." I had some feeling akin to sublimity in the thought that I was standing so near two gentlemen at once, who had travelled to London and seen Guildhall; and the impression became deeper when I was told, a moment afterwards, that the stranger was Professor Silliman, Mr. Wadsworth's brother-in-law.

When I came to College two years afterwards, President Dwight had just passed away; and though I had heard the names of the eminent men who had been associated with him, and were still connected with the College, the name that was most brilliant to my imagination was that of Professor Silliman, who had been made famous by his published volumes of travels in Great Britain and on the Continent of Europe. That work — "Silliman's Journal" it was called — made its author widely known long before there was any popular interest in the sciences of which he was the pioneer Professor. Thus he became — somewhat as Dr. Dwight was in his time — a medium of connection between the learned and scientific community of the College and the great world outside. From first to last, his usefulness was due in no small measure to the fact that he was an organ of communication between this College community, secluded by the nature of its pursuits, and the great outside community for which the College exists. There was formerly — there is now — something like a natural tendency among the people at large to be jealous of institutions of learning, as if there was something aristocratic and anti-popular in them. No man in the history of the College has done more than Professor Silliman has

done to overcome this jealousy, and to make the mass of the people outside aware of the value of these institutions to the Commonwealth, and of the value of scientific inquiries and pursuits as related to commerce and manufactures, and to all productive industry. A just appreciation of what he has done cannot be had without taking the view from this position. Professor Silliman's celebrity as a scientific man was gained not so much by what he did in the way of original exploration and discovery, as by his skill in teaching and diffusing science, and especially by the success of his endeavors to create an interest among all intelligent people in the particular departments committed to his charge. It is chiefly as a teacher of what other men had discovered that he did his great work for science. I think that many gentlemen here — especially those whose memories of College life are thirty years old and upward — will agree with me in saying that, to the students of those days, the hearing of Professor Silliman's lectures on chemistry was a definite era in their intellectual development. My mind, since I heard those lectures and saw the illustrative experiments, has never been the same that it was before. They opened before me a new volume of the great book of Nature; they revealed to me a new aspect of the material universe. I had studied, after a fashion, Enfield's "Natural Philosophy," and had some rude conception of matter considered in its mechanical aspects and relations. But when he opened his volume of the great book, which it is the attempt of all physical science to interpret, I felt that a new light was thrown upon every material thing in Nature. Thenceforward, everything in the universe of matter — from the mote in the sunbeam to the sun itself, or the remotest star — was associated with thoughts of analysis and synthesis, and of elementary atoms and forces. Assuming that others were charmed and enlightened as I was, I may say that the effect of those lectures on the hearers was lifelong, enter-

ing into their intellectual existence, and modifying their habits of observation, of thought, and inquiry, and of imagination.

So in that other field of science through which Professor Silliman led us in the "auld lang syne," the hearing of his lectures was to me a memorable experience. From that time to this, I have never seen a pebble by the wayside without some thought, distinct or indistinct, of the ocean in which it was rounded, and the geological eras through which it has come to us.

Benevolence was the habit of Professor Silliman's feelings. Its genial warmth was felt by all, whether high or low, rich or poor, who came near him. In this regard he was no respecter of persons. Applicants for pecuniary aid, even when their claims were poorly verified, he found it hard to deny. His heart seemed to warm towards the stranger, and towards any whom it was in his power to aid by friendly offices. A volume might be filled with letters to him, acknowledging acts of kindness. The following communication from a distinguished scholar does justice to this beautiful trait of Professor Silliman's character.

DR. CHARLES BECK TO G. P. FISHER.

CAMBRIDGE, *July* 5, 1865.

DEAR SIR, — In your letter of the 1st instant, which reached me yesterday, you ask me to communicate to you my recollections and impressions of the late Professor Silliman. I comply with your request with the more readiness, because desirous that full justice should be done to that excellent man, as regards his position as a scholar, a citizen, and a man. I can illustrate his genuine disinter-

ested kindness by an instance which cannot possibly be open to a question as to the purity and disinterestedness of his motives. This instance is my own case. When I first met Professor Silliman, forty years ago last February, *he* was a man of wide and firmly established reputation as a scientific man, of an honorable and influential social position, and trusted and looked up to by his fellow-citizens. *I* was an unknown stranger, with no friends, who had come to this country in search of free political institutions, and a sphere of usefulness suited to his acquirements and ability, — certainly a very unpromising subject to bestow favor upon, if hope or expectation of a return had had a place in Mr. Silliman's mind. Such were our relative positions at our first meeting. Yet the reception which he gave me could not have been more kind, more considerate, if I had been a valued friend of many years. With that delicate tact which distinguished all his acts of kindness, adapting them to the condition, wants, and taste of the recipient, he introduced me immediately to another of the distinguished scholars of Yale, — Professor Gibbs, — who was, even then, deeply read in the works of German theologians and philologists, thinking that it would be pleasant for me to hold intercourse with one of similar pursuits to mine.

I had also an opportunity of judging of his mode of lecturing, being present at one of his lectures on chemistry. The first circumstance which struck me very forcibly, was the presence of a large number of young ladies, who evidently followed the eloquent lecturer with as close an attention as the students of the College. Though my imperfect knowledge of the language did not enable me to form a competent judgment of the matter and form of Professor Silliman's lecture, I could judge from the effect upon his audience, how successful he was in imparting to others the same deep interest for his science which he felt himself.

The genuine kindness which marked my first reception by Professor Silliman, characterized our succeeding inter-

course. My memory could easily furnish me with many striking examples, but I will close with mentioning the last one. I happened to pass through New Haven just a week before his death. I, of course, called upon him, but he was unable to receive me. In a few hours after, he sent the appended note, not knowing that I had already left town.

I almost envy you the task of preparing the biography of so excellent a man, thus living over, as it were, the life of a truly good man. I remain, with sincere regard,

Your obedient servant,

CHARLES BECK.

To Professor Beck: —

MY DEAR SIR,— I was much disappointed this morning to learn that you, with Professor Salisbury, had just left our door. A loss of voice (temporary, I trust) renders conversation difficult; but I could have seen you, gentlemen, nevertheless, if you would excuse my imperfect enunciation. Mr. Salisbury will, I trust, repeat his call at no distant day, but as my prized opportunities of seeing you are rare, I should still be gratified to see you and Professor Salisbury too, if he will excuse the informality of the invitation. Always with high respect and very kind regard,

I remain, dear sir,

Your faithful friend and servant,

B. SILLIMAN.

The following tribute is of a similar tenor: —

S. F. B. MORSE, ESQ., TO G. P. FISHER.

POUGHKEEPSIE, *July* 20, 1865.

MY DEAR SIR, — . . . . . I have ever looked upon Professor Silliman as my ideal of a perfect Christian gentleman, and as the model of a *neighbor*. He was ever ready to contribute to the relief of any one in distress, always ready in a thousand delicate ways to alleviate the lacerated feelings

of those under Providential bereavement, and these kindly offices were rendered in so unobtrusive and courteous a manner, as to enhance them tenfold. I never knew a more unselfish man, a man of larger heart, and if I differed from him in opinion in regard to the complicated questions of the day, I felt assured that his views and acts were the result of conscientious conviction. I think the cause of science in the United States owes its progress more to Professor Silliman than to any other individual.

His memory is cherished by me with the warmest affection and deepest reverence.

All who have occasion to think or speak of Professor Silliman, are sure to revert to the courtesy of his manners. His deportment was equally removed from stiffness on the one hand, and from a vulgar familiarity on the other.

"He was," says President Woolsey, "among all the men who have lived in this city during the present century — as I think will be conceded by everybody — the most finished gentleman. And this was true of him in the highest sense. I mean that it pertained not to his exterior, but to his character and his soul. It was founded on a high sense of honor, a delicate perception of what was due to others, and was due from them to him. His dignity of manner was not so much modelled after the old style, which the gentlemen of the days before the Revolution handed down, as it ran back into dignity of character; it proceeded from a self-valuation, which, without being assuming, takes the right place, neither depriving others of what is their due, nor being afraid to occupy a position which is fairly one's own. But the radical, essential trait of his gentlemanly character was gentleness and kindness. This led him to study the pleasure, to respect the feelings of those in whose society he was placed; and this, whether they were high or

low in the world. For the poor, the dependent, the young, the undistinguished, — for all, he had a good word; and the word was not an empty token, but the indication of the truth that lay in the heart. Hence all loved him." *

A communication from Rev. George Jones, Chaplain in the United States Navy, who married a niece of Professor Silliman, touches on this and other virtues of his character.

BROOKLYN, N. Y., *July* 24, 1865.

. . . . . IT is often the case with the writings of individuals that some go beyond, some fall short of the real nature of the writer, and Professor Silliman's were frequently of the latter kind. They do not show him to be the companionable, hearty, genial man that he was, with sympathies ready to gush out at any moment, though they were well regulated. Indeed, there was a quick, spontaneous goodness about him, which would be very apt to give way to a degree of stiffness in the case of any one sitting down to the more formal business of writing. I think the most striking thing in Professor Silliman was *his freshness* of feeling, even to the very last of his life. He was one of the few, the very few, persons whom we meet, who, in this respect seem as if they do not grow and never can grow old. My intimate acquaintance with him commenced thirty-seven years ago, and continued unbroken till his decease; and in this respect I never knew in him any change. It was one of the greatest charms in his companionship, for it not only made the dignity of his age and his great acquirements sit gracefully upon him, but it drew one powerfully toward him from the instinctive perception that such a heart must be a thoroughly true one towards God and towards all men.

This leads me to speak of another thing about him; and that is the quick manner in which he and children always

* *Funeral Discourse*, p. 13.

drew towards each other, — he to them, they to him. Any one who knew him could see this; but I witnessed a striking exemplification of it two years ago, during one of his visits to this city. He had asked me to take him to see our iron-clads, and we went, first to see the *Keokuk* and *Roanoke*, at the Novelty Iron Works, then to the Green Point Works, also, while there, to Francis' Life-boat Manufactory, and then across New York to one of the new monitors lying in the Hudson. I give here the whole excursion, for it will show his bodily activity at that period of life, since notwithstanding my repeated cautions as to fatigue, he was still leading on; but my chief purpose was to say, that, in every omnibus which we entered, if there were children he immediately noticed them, and quickly made them his friends. Such scenes were quite characteristic of the Professor, and I have seen a great many of them in the course of our numerous excursions together.

In this connection I may as well remark on his uniform politeness to all the workmen, in every workshop which we entered; not a condescending politeness, such as we may sometimes see used by men in high stations, and which is more offensive far than no notice at all, but that which a true gentleman will exhibit towards every one.

During these thirty-seven years, I have known Professor Silliman, I believe, thoroughly, for he laid himself open to me as probably he did to few persons, and he was indeed always a very transparent person. I have seen him in all situations and under all circumstances, domestic and public; have seen him honored and applauded, and have stood by him in his trials; and I believe that in all that intercourse I never knew him to do a wrong act or say a wrong word, or, as far as I could judge, think a wrong thought. This is saying a great deal; and perhaps some would smile at the extent of the eulogy; but those who knew him will believe that there is no extravagance in the remark. His life was in exact accordance with his death. Both were beautiful.

I never saw him angry; but his indignation at matters requiring such feeling was prompt, and showed itself in decisive words and acts; his impulses were quick, but always generous and noble, and they formed a very pleasing part of his character. . . . . His religion was a constant flame, brightening his own path, and giving light to all around him.

The love of esteem was an evident trait of Mr. Silliman. It was manifested from early life. Every reader of these volumes will notice the satisfaction he took in the appreciation accorded to his labors, and in his extending fame. It would be a grave error, however, to conclude that he had a sensibility to admiration, which amounted to a weakness. He had too much self-respect to turn out of his path to seek applause; he was as far as possible removed from the spirit of envy and detraction; and the desire of esteem was not the mainspring of his exertions. On the contrary, he was as frank as he was courteous, in avowing his opinions to those who differed from him, and he would instantly risk or sacrifice his popularity rather than desert a principle. While he was thus established in his integrity, he neither felt nor affected a cynical indifference to the favorable opinion of his fellow-men; and the pleasure which their approbation and respect gave him, was more apparent in his case than in that of men who are less apt to expose their feelings.

When we cross Mr. Silliman's threshold and see him in his own family, the most attractive side of his character is presented to view. Here the force and gentleness that were blended in his nature, appeared in his mild but firm sway over his children. Here

his good temper, never breaking out in sallies of passion, made perpetual sunshine in the household. Here, too, his vivacity and humor had full play; and his kindness towards all men shone out in his just and charitable judgments. And here the sincerity and warmth of his heart were most manifest, and his reverence for God and sacred things made an atmosphere of peace around him. That this is not an exaggerated picture of the domestic character of Professor Silliman, can be established by the best of testimony. We are permitted to insert the following communication from his eldest daughter, Mrs. Church: —

My earliest recollections are of a loving, sympathizing and reasonable parent. I cannot recall any instance of impatient or unjust treatment at his hands. When very young children we were allowed to be with him in his busiest hours, if only we played quietly without needing his interference. Even now I can recall the kind tone in which he would say, "My little girl will not trouble papa." He always entered the house with a smile, — if we were near, would make some playful remark, often joining in our play, throwing his large cloak over one or two at our game of hide-and-seek. Among my pleasant memories are long drives with him when it was the custom to travel in one's own carriage. A journey to H—— was recreation to him; he would drive, and tell us stories, help us to count all the vehicles of various kinds we met on the road, ask us questions in our lessons, repeat scraps of poetry, and allow us to hold the reins while he walked up the hills. After tea, when we were older, he would give us lessons on the globe, explaining the latitude and longitude, and different geographical terms and divisions. He, first of any one, criticized my compositions and youthful effusions, and so kindly

and encouragingly that I never feared to go to him, lest he should laugh at my jejune productions. In fact he never ridiculed any for their ignorance of what to him was mere A B C, but would patiently enlighten them, or direct them to sources of information. He never decided dogmatically upon any question or subject which was new to him, but would say, "Such a thing might or might not be, he would examine before he could decide." I recall a long period of his life when he was intensely busy, early and late, scarcely taking time for meals and sleep, yet he would always spare a few moments most patiently to any one needing aid or advice. He was never fretful or complaining, making the best of all inconveniences, and finding some way around all difficulties. Cheerful and hopeful, both constitutionally and by reason of the Christian faith within, his fortitude always helped to sustain the timid, and encourage the hesitating. Detraction, mimicry, and ridicule of the absent, were most repugnant to him, and would call forth in any of his own family a rebuke that was keenly felt. His anger, if he can be said to have manifested that quality, was aroused by unkindness or injustice toward others, rarely by any treatment of which he was the recipient. He was not merely just, but liberal and generous to a proverb, disdaining anything niggardly or underhanded, or mean, intensely.

No dread of being for hours alone with papa ever came into our young minds, for we did not fear him; the only thing we feared was his displeasure, and that was never undeservedly incurred. Well do I remember, as I grew older, the admiration I had for his noble presence, finished manners, and elevated conversation, when he was in the prime of his life. The polished exterior which Lord Chesterfield's rules might give, was with him the result of Christian kindness and association with refined and cultivated people, irrespective of forms and conventionalities.

He was an enthusiastic *traveller*, knowing where to find

objects of interest, whether curiosities in nature or historical localities; he had a ready anecdote, or narrative of a conversation, or a battle, which, told in his animated manner, always impressed itself upon the memory of the young.

His very thoughtful, deferential love for our mother was an example to her children; nothing which would contribute to her comfort or pleasure was forgotten, even when he was most engrossed in his professional labors.

It was his pure Christian character which made him what he was in each relation of life, and which enforced the moral and religious instruction he ever gave as opportunity occurred.

Mrs. Hubbard writes of her father as follows: —

Among my earliest recollections of my dear father, his unwearied patience and affectionate care of his *little* children, is vividly impressed upon my memory. Some of us suffered from childish ailments, causing painful, wakeful nights. Well do I remember how tenderly we were soothed, and how patiently everything was done for our comfort, no matter at what cost of much-needed rest for himself.

The beautiful Bible stories were first learned from his narration; a treat it was when we could draw from him Daniel in the den of lions, and Joseph and his brethren. Another treat too, was to have papa hear our Sabbath evening recitation of the Assembly's Catechism, — he would make it so plain and *almost* pleasant to us.

Never, I am sure, can any of us remember that he spoke to us in anger; his reproofs were so tender that, while they almost broke our hearts, we felt more than ever drawn to him in love.

His constant watchful care for our religious interests, we can never forget; his earliest present to us was a Bible, the older ones each as the fourth birthday came, receiving it, inscribed to us, from our affectionate father.

He was, in all his busy life, an early riser, and whoever

of us was early enough, was sure to find him with his Bible in his hand, or hear his voice raised in his morning devotion. In my early days, bereavements were numerous in the household: four of the lambs of the flock were taken away in quick succession; then he always gathered the broken band and led us in prayer to Him who gave and who recalled his own.

The first of these bereavements was in the death of our father's mother; his grief on that occasion, and the reverent love manifested, are fresh in my mind, and, till the last of his life, I never knew him to pass the spot where her grave lay without raising his hat and remaining uncovered till he had left the place behind.

Our confidential friend he ever was; we could go to him with the utmost freedom and unbosom our troubles; no matter what business was pressing on him, he had time to hear all, and to give us his most tender sympathy and affectionate counsel. Every burden was lightened when dear father helped us to bear it. Especially was this the case with our religious difficulties, and with some of us these were heavy. Never can we forget how the clouds would roll away, as he would listen patiently to all our troubles, and then so clearly show us the true ground on which to rest, — the infinite love and mercy of our heavenly Father, through the grace of Christ, — and as often as the clouds returned, so often and so tenderly would he go over the same ground till the cloud passed to return no more. A remark of Leigh Richmond's daughter, I am sure, was the feeling of us all, — "That when our hearts felt too hard and cold to thank God for anything else, we could always thank Him for such a father."

The traits of Professor Silliman, as they appeared in his family life, are further touched upon in the annexed paragraphs from the pen of Mrs. Dana.

My childish memories of our beloved father, of course, commence when he was already in the full maturity of life, when having recovered from the impaired health consequent upon the illness and death of Trumbull, and the subsequent afflictions in the family, he was once again strong and vigorous. I never knew him as in other than perfect health, and as I grew older, fully appreciated his noble face and manly presence.

He was forty-four when I was born, (1823,) and by the time I was old enough to take heed of his occupations, he was full of cares and duties, quite too busy to give the personal attention to the instruction of his two younger daughters, which had been the privilege of their elder sisters. There are some bright pictures, far away in the early days, when we children rejoiced in having him quite to ourselves. One of these was on a journey to Springfield when I could not have been much more than eight. He drove an open carriage, with his little girls and a young playmate for his companions, while our mother was with our uncle and aunt in a coach. It was very grand, in youthful eyes, to travel in the coach with the fine horses, but still we children all preferred the freedom we had with him, and the interest he took, not only in amusing us, but in giving us instruction along the way.

I distinctly recall his manner to our invalid uncle, his patience with narratives always minute, sometimes tedious, and how tenderly his strength and vigor were loaned to one who so needed both. *We* were accustomed to see our father looked up to, and his gentle deference to this elder friend was new and beautiful to us.

It was his habit early to take his children into his confidence, to teach them that the privacy of home and the freedom of family conversation were a bond upon them also. He liked to have them know and understand what he was doing, and often read any paper or discourse he was preparing with peculiar care to our mother and her

daughters. It was a maxim with him, that any objection that suggested itself to one mind might occur to another, and the modest remark of his youngest auditor received attention. We were often called to help him "read proof," and were thus allowed to feel ourselves of use, — a privilege children keenly enjoy. His habits of neatness and order made it pleasant to him to find his study-table brushed, and all things nicely arranged. By great care in the use of my prerogative, I was gradually allowed free scope. Often cards of memoranda might be found among his papers, headed "*Stevens*." To the inquiry what this meant, he laughingly acknowledged he could not tell! He had seen such on the table of his tutor at Fairfield, — the Rev. Mr. Eliot, — when a mere lad, and had almost unconsciously followed the example. It was one of the few habits of his life for which he could not "render a reason."

His readiness and eloquence in the lecture-room became a proud pleasure to us, and I can well remember the amusement our dear mother caused us by saying, late in her life, that she had never heard him speak without a fear that he might "break down." This was merely an indication of her habitual timidity and caution. The word *fail* never could have any connection with him. I went with him once to a Lyceum lecture in this place, where, after the audience were assembled, it was learned that the speaker could not appear. Those in charge, in their perplexity, appealed to our father, and on the spur of the moment he rose and spoke, I think, nearly two hours, on the atmosphere. I was sure we had fared better than if the original programme had been carried out, and well remember the glee with which we came home to tell the tale, and surprise "mother."

He was ever the life of home, loving and bright, ready with a playful remark to encourage any brightness in his children, but with never any sympathy for satire, or for wit that bore a sting. He was never too tired to greet us with a kind word, and always took a tender pleasure in having

us about him. Of a Sunday evening, when free from the cares of the week, he sat longer in his place at the table after tea, the two little girls often stole behind his chair, and with each an arm around his neck, enjoyed hearing him sing, —

"While shepherds watched their flocks by night."

He delighted to tell and we to hear, the stories of his early home, his father's capture, and his own recollections of his boyish life at Fairfield. His love and reverence for his parents, came out with great force in these sketches.

As years passed on and grandchildren came to his home and heart, we saw the tenderness of his character in a new relation. The little ones were ever welcome, and their feeling toward him proved the truth of his oft-repeated remark, that "children and women always knew who liked them." They delighted in grandpa's coming, and soon learned to climb his knee and expect a ride. It was a pretty picture to see two little creatures enjoying this pleasure. I can almost hear now his hearty laugh when told that one of the grandsons had treated his little sister's dolls to a ride with grandpa's tune!

When in the autumn of 1859, it became necessary for us to seek health in foreign travel, the dear old home was most kindly opened to our two younger children. Of course they brought care with them, but the patient love never failed, and the letters that were so eagerly looked for in a distant land, always bore tender notice of the little ones. They became very dear to both grandparents, and when in a year after our return, they were both called to the mansions of our heavenly Father, the sorrow was deeply shared. During the dying hour of our little daughter, dear grandpa stole into the room, slipping off his shoes to move more quietly. The blue eyes were fixed upon him standing at the foot of the bed, and the little spirit departed with the closing words of his earnest

prayer! The affliction opened anew his early wound in the death of Trumbull, and he mourned with us.

It is no small satisfaction that of the twenty-three grandchildren living at the time of his death, all but two will remember, and in different degrees appreciate, the noble person, warm heart, and loving manner that were their knowledge of a grandfather.

I am tempted to close this pleasant task by quoting the words of one who was among us for a few hours only, within the last four years: — "When I saw your father, vigorous though venerable, and in the evening of life surrounded by such a posterity, my thoughts went back to the times of primitive peace, and as my lips were about to frame the word, the 'Patriarch' spake for himself. They were always sublime to me, and Genesis a favorite book for its beautiful family relationships which my own wants ever led me to value so highly."

And thus it ever was, and with increasing beauty as this life brightened into the perfect day. None came within the circle of his kindness — and how far and wide it extended — who did not feel themselves improved, comforted, and armed with new courage to seek that excellence which in him was so lovely because so full of love.

New Haven, *November* 18, 1865.

That the estimate of a father's excellence, which has been presented above, is not overdrawn, is shown by the following letter from the accomplished lawyer who was for several years an inmate of his household.

JUDGE S. J. ANDREWS TO G. P. FISHER.

Cleveland, *June* 30, 1865.

Dear Sir, — Your favor of the 10th inst. was duly received, but found me so much occupied that I was unable to give it immediate attention.

It was my privilege to be connected with Mr. Silliman as his assistant, from the fall of 1821 until the winter of 1823, and for a considerable part of that time to be a member of his family. It was when his health was broken down by care, excessive labor, and domestic affliction, and when if ever any infirmities of temper or character were likely to be revealed to one intimately associated with him. I cannot pretend, however, after such a lapse of time, to state particular facts or incidents, if such there were that influenced my opinion; but I retain, and shall retain to the last hour of consciousness, the general impression made upon me by his daily life. I thought then, — and subsequent experience and observation have not reversed the judgment, — that, viewed in all its aspects, his was the most faultless character I had ever known. The nearer you approached it, the more symmetrical and beautiful it appeared; and those who met him only in the occasional intercourse of society, though delighted, as all were delighted, with his genial conversation and manners, had really no adequate conception of his excellence and attractiveness, as exhibited in the *undress*, if I may so express myself, of domestic life. As the head of a family, he seemed to me to be absolutely perfect. His considerate care and kindness extended to the humblest member of his household; and, while he never forgot the respect that was due to others in the relation he sustained to them, he rendered to them just the measure of attention and regard to which they were entitled. Under the pressure of ill health, which so often invites forbearance even towards good men, though his cheerfulness was occasionally abated, he was never irritable, never impatient, never unmindful of the claims or comfort of others, nor did he ever in my presence utter a harsh expression or betray an unkind feeling towards any human being. Indeed, I used to think, that in his estimate of men and their conduct, his charity sometimes trespassed a little upon the domain of a just

and proper discrimination. In an affectionate and united family group, such as is not often seen in this world, he was the central figure, imparting happiness to all, and reaping his reward in the immeasurable love and reverence of all. In a word, he was, in the largest and best sense of the expression, a Christian gentleman, who felt the power of religion in his own heart, and commended it to others by the silent but persuasive teachings of a consistent life.

What I have written is probably too indefinite to subserve your purpose; but I am afraid to enter upon details, or to put trust in my memory, after an interval of more than forty years, embracing the active period of life, and devoted to the duties and exactions of a laborious profession.

Such was the impression which Mr. Silliman made on those who knew him best. It confirms the view that was taken of him by persons whose opportunity of intercourse with him was less. Says Professor Jeffries Wyman (whose estimate of Mr. Silliman as a lecturer has already been given): —

"For Professor Silliman's life and character I have a feeling of deep reverence. This is greater than that towards any other person with whom I have come in contact in the relation of a teacher. I prize highly, very highly, what he taught me in science, and the direction he gave to my studies, all unconsciously to himself; but I have no words to express my admiration of the moral dignity of his character and its beneficent influence. After the lapse of a quarter of a century, I find myself often recurring to the teachings and example set before us during the seasons he passed in Boston. His cordial greeting; his dignified, yet often joyous, manner; his freedom from bigotry; his earnestness and devotion to the pursuits of knowledge; his readiness to impart his stores of learn-

ing; his kindness of heart, and, above all, his great Christian excellence, his peaceful and finished life, have made him to me a model man."

Two communications from cherished friends of Professor Silliman, in which his traits are correctly depicted, though in the warm colors of friendship, will close this memoir.

PROFESSOR C. U. SHEPARD TO G. P. FISHER.

LONDON, *August* 10, 1865.

MY DEAR PROFESSOR FISHER, — Yours of the 14th ultimo has just been forwarded to me from Göttingen. To your request for a few reminiscences of Professor Silliman, I respond with the utmost pleasure. You ask me to make them as personal as possible. Were I to consult my feelings, they would be wellnigh filial. My first acquaintance with his name goes back to the period when I had just begun to read books of travel and history. Never shall I cease to remember the strange delight with which I pored over his journal of a residence in this land. It introduced me to an entirely new world of ideas, to objects more grand than I had ever dreamed of, characters who seemed superhuman, sciences incomprehensible, and adventures by sea and by land that filled me with irresistible longings. The perusal of the work imparted a color to my entire existence. And, although nearly twenty years elapsed before I met with the author, and not until many years after the death of my father, so soon as I saw him, my heart went out to meet him with the feelings of a son. Our acquaintance originated in some contributions to his "Journal of Science" which I had made while yet a student in Amherst College. This had led to an exchange of letters, and ultimately to a request of mine to become a student in his laboratory. The proposal was kindly acceded to, and I soon found myself pleasantly located at

New Haven, in possession of unrestricted access to all the scientific departments of the Institution. He manifested the deepest interest in favoring and assisting me in all my studies, permitting me to examine freely the treasures of the Gibbs Cabinet of Minerals, — then the only one of note in the country, — and encouraged me to engage in chemical researches, accompanied by the generous permission of ordering for the Laboratory whatever might be needed in their prosecution. After thus spending a few months, a vacancy occurred in the office of Assistant to the Professor of Chemistry. The Professor at once tendered the situation to myself. It was the more gladly accepted, because it gave me the certainty of a longer and closer intimacy with my instructor than I could have expected under any other circumstances. In particular, it brought me more frequently to his house, and gradually into intimate relations with his family, where, I soon discovered, that the most attractive side of his character was displayed. In all the virtues of the family and the household I must ever esteem him as one of the worthiest and the best. It is not permitted me to speak of many instances of goodness with which, in this sphere, I became acquainted. They are, however, indelibly impressed upon my memory, and interwoven with the inmost fibres of my heart; and yet I cannot wholly avoid allusion to the family adoption of one who preceded by several years her foster-parents to the better world, and in whose history my own brightest earthly joys were written. An auspicious destiny affixed us for almost a life-long residence as his immediate neighbors, and for this whole period no shadow intervened to mar our happiness, or to dim our admiration of the character of Professor Silliman. He was a man so nearly without faults, that if he had them they were so over-dazzled by his excellences you could not detect them. It also strikes me in comparing him with others that his virtues were more nearly natural than in these. For whereas it seems to

require constant watchfulness and discipline to prevent most persons from sometimes failing in what is graceful and noble, with him these actions were involuntary and spontaneous. His goodness was so untinctured by calculation, so all-embracing, so gentle! He deeply struck all who came in contact with him,— the high and low, the unlearned and the educated. These were the first words of Humboldt to me on handing him the card of my instructor: — "Professor Silliman is an excellent character." He felt a sincere interest in the welfare of every one with whom he came in contact, and fully showed it by appropriate speech and action. His manners were marked by the most natural dignity and nobleness. For easy, sprightly, instructive conversation, he surpassed any man I have known. He was the charm of the social circle, and one in whose solitary companionship you never tired. His correspondence was equally entertaining, and reminded one of some of the best models of the old English letter-writers. His charity towards his fellow-men was a striking feature in his character. He not only lived up to the posthumous injunction against evil speaking, but he abstained from it in respect to the living. He encountered opposition of opinion without the smallest discomposure, as if satisfied that all knowledge was not yet attainable, and that nothing but the truth would at last stand. He never manifested the common phases of literary ambition, but seemed quite satisfied to lead a life of general usefulness to mankind. And I think he was as far removed as any one I have known from the vulgar imputation of making activity a life-labor for reward. At least the compensations on which he fixed his eyes were lofty and remote, and such perhaps as might be inferred from a remark he made to me respecting a common friend, who under circumstances of great difficulty had procured the freedom of a highly educated and almost white young man and his mother, both of whom were on the eve of being sold into distant slavery. "That," said he, "is an action

that it will be pleasant to think of in heaven." He was neither elated by success or depressed by disappointment. His cheerfulness of mind and bodily elasticity were wonderful. I never saw him out of humor, or apparently fatigued. He was never idle, never in a hurry. His temperance was remarkable. The pleasure he derived from the table could only be seen in the agreeable flow of conversation attending the meal. I never heard him remark upon a dish, nor did I ever see him drink wine. His health was perfect. During our entire acquaintance he never complained of an uneasiness in my hearing. He required the least amount of sleep for the preservation of all this vigor and freshness, of any man of whom I have read. Gloomy anticipations found with him no resting-place. Of death he used to speak with the utmost composure; and he has said to me while we were occupied with the experiments to be produced at his lecture, that he was just as ready to go then, if it was God's will, as from any other place, or at any other time.

I do not of course speak of the claims of Professor Silliman as a patriot, a philanthropist, a scholar, or a Christian; others will better testify on all these points. But I may perhaps be permitted to observe in closing that I cannot doubt of his free admission to a place among the deserving names of mankind. Had the energies of his life, instead of being devoted to the diffusion of science in a new country, been concentrated upon a single department of knowledge, his claims to scientific eclat would be more easily established; just as the deep grooves across a mountain of granite produced by the passage of an ancient iceberg, are better seen than the more beneficent effects, even, that result from the deposition of the same amount of water over fertile fields, under the gentle form of dew.

REV. DR. SPRAGUE TO G. P. FISHER.

ALBANY, *July* 11, 1865.

MY DEAR PROFESSOR FISHER, — I will not dissemble the fact that I feel honored by your request that I should communicate to you some of my recollections of our dear and venerated friend, Professor Silliman, in aid of your proposed memoir of him; but I greatly fear that the best I can do, in compliance with your request, will disappoint you. My relations with him during several of his last years, were indeed intimate, even affectionate; but our meetings were by no means frequent, and nearly all our intercourse was through the medium of a correspondence which is already in your possession. I will state a few incidents in connection with the history of my acquaintance with him, which come readily to my remembrance, together with the general impression which his character made upon me.

My first knowledge of Professor Silliman dates back to the period when he returned from Europe, after his sojourn there with a view to prepare himself for the duties of his professorship. His name, at this time, became well known in and around my native place, (Andover, Conn.,) from the fact that Andover was in the neighborhood of Lebanon, the residence of Governor Trumbull, to whose daughter he was engaged to be married; and the visits that he used to make to this charming lady served as materials for gossip a dozen miles off. After a while the Journal of his travels and residence abroad appeared in two volumes, and though I was not much more than a dozen years old, well do I remember with what wonder and delight I followed him about in his transatlantic wanderings, and how much more interested I was in those books than in any others I had ever read. When I came to College in 1811, I was not a little curious to see the man of whom I had heard so much, and with whose writings my youthful mind had become so entranced. When he was pointed out to me, I thought

him, so far as everything pertaining to his countenance and figure, his air and manner, was concerned, just about the most perfect specimen of humanity that I had ever fallen in with. During the first two years of my College life, I do not remember ever to have spoken with Mr. Silliman, nor indeed in my Junior year, except as he questioned me in common with the rest of the class, to find out what we had remembered of his chemical and mineralogical lectures. But I used to gaze at him every Sunday, as he sat in the gallery of the old chapel, in spite of Dr. Dwight's eloquent and powerful preaching, as if part at least of my errand there had been to admire a graceful and beautiful person. If my memory serves me, the first time I ever spoke with him was in April, 1815, less than six months before the close of my College course; and both the occasion and the nature of the interview are embalmed in my memory. It was during a revival of religion which swept with power through the College, and brought the most thoughtless into an attitude of serious reflection, and, in respect to not a small number, seemed to work the great change decisive of their eternal destiny. My own mind was drawn powerfully in a new direction, insomuch that I felt myself obliged to stay away from the recitations and lectures, I believe, for two or three days. As I was coming up Chapel Street one morning, I saw Professor Silliman at a little distance from me, and as I knew that I had to render my excuse for absence from his lectures, I thought I might as well do it then; and I accordingly approached him, stated to him the reason of my absence, and begged him to excuse me. His answer was so kind, I may say so sympathetic, that he not only put me entirely at rest, but drew me to him in cords of gratitude and affection; and I suppose his kindly demonstrations were all the more pleasing from my having just been told that one of my classmates, in similar circumstances, had offered the same excuse to another member of the Faculty, and had been given to understand that it

was hardly sufficient, as one duty could not be allowed to crowd out another. I do not remember to have had any further personal interviews with Mr. Silliman, while I remained at New Haven, except that just at the close of my College life he did something towards procuring me a place as a teacher, and showed great kindness in introducing me to it.

After I left College, I occasionally met Mr. Silliman at New Haven and elsewhere; but though I ventured to reckon him among my friends, and more than once received from him expressions of good-will, I never felt that my relations with him were intimate until some ten or twelve years ago. At the dedication of the Dudley Observatory in 1856, — an occasion which I believe brought together a greater number of distinguished persons than were ever, at any other time, assembled in our city, — our venerable friend was present, and I had the honor of having him for a guest; and I never saw him when he was more communicative or agreeable. Mr. Everett, and one or two other kindred spirits were with us at the same time; and each rendered the others more brilliant and interesting. Though the Professor had then numbered more than his threescore and ten years, he was just as bright and sociable and cheerful, just as ready to impart, and as eager to obtain, information on every subject, as if he had been at the zenith of his activity.

The last time I saw him was at the Yale College Commencement in 1860, when his mind and his heart were full of the perils that seemed to hang over the country. He expressed the strongest conviction that slavery was at once our great national calamity and sin, and that that must be wiped out before our nation could ever attain to the glorious destiny that awaits it. Either in conversation or in one of his letters, he gave me a detailed account of the outrageous insult of which he was the subject from a set of rebel vandals in New Orleans, who removed from its place,

in some public building, a fine picture of him, for which he had been requested to sit, and destroyed it by throwing it into the river.* On the whole, when I think of Professor Silliman, I bring before me a man who had as few infirmities, and as many sterling good qualities, as we can reasonably expect to find in this imperfect state. I recall with admiration his attractive exterior; his fine person and winning address; but with much greater admiration his noble qualities of mind and heart; his quickness of perception; his facility at combining and arranging his vast stores of knowledge, and his graceful style of communication; his invincible fidelity to his own convictions; his kindness, his charity, and above all, his earnest devotion to the cause of Christ, — as I think of these and other traits, his character rises before me as a specimen of humanity in its most exalted form. The best wish I can express for my dear old *Alma Mater* is, that this character may be reproduced in all who shall hereafter occupy her high places.

* Recent intelligence renders it probable that Professor Silliman had been misinformed, and that the picture was not destroyed. — F.

APPENDIX I.

LETTERS TO THE SECOND GOVERNOR TRUMBULL FROM GENERAL WASHINGTON AND MARTHA WASHINGTON.

GENERAL WASHINGTON TO GOVERNOR TRUMBULL.*

MOUNT VERNON, *December* 4, 1788.

MY DEAR SIR, — It is some time since I had the pleasure to receive your favor of the 28th of October, but as I had nothing particular to send in return, I postponed writing until the present time, to see whether anything new would turn up. Nothing of importance has occurred; but in the mean time, I was extremely happy to find that your State was going on so well as to Federal affairs; and you will permit me to say, that I have been not a little pleased with observing that you have stood so high in the nomination for representatives to Congress.

In general, the appointments to the Senate seem to have been very happy. Much will depend upon having disinterested and respectable characters in both Houses; for if the new Congress should be composed of characters in whom the citizens will naturally place confidence, it will be a most fortunate circumstance for conciliating their good-will to the government, and then if the government can be carried on without touching the purses of the people too deeply, I think it will not be in the power of the adversaries of it to throw everything into confusion, by effecting premature amendments. A few months will, here even, show what we are to expect.

I believe you know me sufficiently well, my dear Trumbull, to conceive that I am very much perplexed and distressed in my own mind, respecting the subject to which you allude. If I should (unluckily for me) be reduced to the necessity of giving an answer to the question, which you suppose will certainly be put to

* This letter was written a few months before the new government went into operation. Washington was inaugurated, April 30, 1789. — F.

me, I would fain do what was in all respects best. But how can I know what is best, or on what shall I determine? May Heaven assist me in forming a judgment, for at present I see nothing but clouds and darkness before me. Thus much I may safely say to you in confidence; if ever I should, from any apparent necessity, be induced to go from home in a public character again, it will certainly be the greatest sacrifice of feeling and happiness that ever was or ever can be made by him who will have, in all situations, the pleasure to profess himself with sentiments of real esteem,

Your affectionate friend and obed^{t}. servant,

G^{o}. WASHINGTON.

THE HON. JONATHAN TRUMBULL.

GENERAL WASHINGTON TO GOVERNOR TRUMBULL.

PHILADELPHIA, *March* 3, 1797.

MY DEAR SIR, — Before the curtain drops on my political life, which it will do this evening,— I expect forever,— I shall acknowledge, although it be in a few hasty lines only, the receipt of your kind and affectionate letter of the 23d of January last.

When I add that, according to custom, all the acts of the session, except two or three very unimportant bills, have been presented to me within the last four days, *you* will not be surprised at the pressure under which I write at present; but it must astonish *others* who know that the Constitution allows the President ten days to deliberate on *each bill* that is brought before him, that he should be allowed by the legislature less than half that time to consider *all* the business of the session; and in some instances, scarcely an hour, to revolve the most important. But as the scene is closing with me, it is of little avail *now* to let it be with murmurs.

I should be very unhappy if I thought my relinquishing the reins of government would produce any of the consequences which your fears forebode. In all free governments, contention in elections will take place; and whilst it is confined to our own citizens, it is not to be regretted, — but severely indeed ought it to be reprobated when occasioned by foreign machinations. I trust, however, that the good sense of our countrymen will guard the public weal against this, and every other innovation; and that, although we may be a little wrong, now and then, we shall return

to the right path with more avidity. I can never believe that Providence, which has guided us so long, and through such a labyrinth, will withdraw its protection at this crisis.

Although I shall resign the chair of government without a single regret, or any desire to intermeddle in politics again, yet there are many of my compatriots (among whom be assured I place you) from whom I shall part sorrowing; because, unless I meet with them at Mount Vernon, it is not likely I shall ever see them more, as I do not expect I shall ever be twenty miles from it after I am tranquilly settled there. To tell you how glad I should be to see you at that place is unnecessary; but this I will add, that it would not only give me pleasure, but pleasure also to Mrs. Washington and others of the family, with whom you are acquainted; and who all unite in every good wish for you and yours, with, dear sir,

Your sincere friend and affectionate servant,

Go. Washington.

Jonathan Trumbull, Esq.

The early part of the following letter relates to a plan for emancipating the Southern dependencies of European powers in America, and of combining with them in a system of common defence. This scheme had been broached in a letter of Colonel Trumbull to Washington.* The concluding portion of the annexed letter, together with the communication from Washington which follows it, presents an interesting disclosure of his feelings in view of a proposition that he should stand as a candidate for the Presidency for a third term. His sentiments in regard to the position of the Federal party and the character of their opponents, are clearly set forth.

GENERAL WASHINGTON TO GOVERNOR TRUMBULL.

Mount Vernon, *July* 21, 1799.

My dear Sir, — Your favor of the 22d ultimo got to my hands yesterday, *only*. It came safe, and without any apparent marks of violence; but whence the length of its passage, I am unable to inform you.

* The letter of Colonel Trumbull with the response of Washington, may be found in Colonel Trumbull's *Reminiscences*, Appendix, (p. 379, *seq.*)

To you, and to your brother, Colonel John Trumbull, I feel much indebted for the full, frank, and interesting communication of the political sentiments contained in both your letters.

The project of the latter is vast, — and under any circumstances would require very mature consideration; but in its extent, and an eye being had to the disorganizing party in the United States, I am sure it would be impracticable in the present order of things.

Not being able to convey my ideas to you, on this subject, in more concise terms than I have already done to your brother, in answer to the letter he informs you he had written to me, I shall take the liberty of giving you an extract thereof, as follows: —

"For the political information contained in it, (that is, his letter,) "I feel grateful, as I always shall for the free unreserved commu- "nication of your sentiments upon subjects so important in their "nature and tendency. No well-informed and unprejudiced man, "who has viewed with attention the conduct of the French gov- "ernment since the revolution in that country, can mistake its "objects, or the tendency of the ambitious projects it is pursu- "ing. Yet, strange as it may seem, a party, and a powerful one "too, among us, affect to believe that the measures of it are dic- "tated by a principle of self-preservation; that the outrages of "which the Directory are guilty, proceed from dire necessity; that "it wishes to be upon the most friendly and amicable terms with "the United States; that it will be the fault of the latter if this is "not the case; that the defensive measures which this country has "adopted, are not only unnecessary and expensive, but have a "tendency to produce the evil which, to deprecate, is mere pre- "tence in the government; because war with France, they say, is "its wish; that on the militia we should rest our security; and "that it is time enough to call upon these when the danger is "imminent and apparent.

"With these and such like ideas attempted to be inculcated upon "the public mind (aided by prejudices not yet eradicated), and "with art and sophistry, which regard neither truth nor decency; "attacking every character, without respect to persons, public or "private, who happen to differ from themselves in politics, I leave "you to decide on the probability of carrying such an extensive "plan of defence as you have suggested in your last letter, into "operation, and in the short period which you suppose may be "allowed to accomplish it in."

I come now, my dear sir, to pay particular attention to that part of your letter which respects myself.

I remember well the conversation which you allude to, and have not forgot the answer I gave you. In my judgment it applies with as much force *now* as *then;* nay more, because at that time the line between parties was not so clearly drawn, and the views of the opposition so clearly developed as they are at present: of course, allowing your observation (as it respects myself) to be founded, personal influence would be of no avail.

Let that party set up a broomstick, and call it a true son of liberty, — a democrat, — or give it any other epithet that will suit their purpose, and it will command their votes *in toto!* * Will not the Federalists meet, or rather defend their cause, on the opposite ground? Surely they must, or they will discover a want of policy, indicative of weakness and pregnant of mischief; which cannot be admitted. Wherein, then, would lie the difference between the present gentleman in office, and myself?

It would be matter of sore regret to me, if I could believe that a serious thought was turned towards me as his successor, not only as it respects my ardent wishes to pass through the vale of life in retirement, undisturbed in the remnant of the days I have to sojourn here, unless called upon to defend my country (which every citizen is bound to do), but on public ground also; for, although I have abundant cause to be thankful for the good health with which I am blessed, yet I am not insensible to my declination in other respects. It would be criminal, therefore, in me, although it should be the wish of my countrymen, and I could be elected, to accept an office under this conviction, which another would discharge with more ability; and this, too, at a time when I am thoroughly convinced I should not draw a *single* vote from the anti-Federal side, and, of course, should stand upon no other ground than any other Federal character well supported; and, when I should become a mark for the shafts of envenomed malice and the basest calumny to fire at, — when I should be charged not only with irresolution, but with concealed ambition, which waits only an occasion to blaze out, — and, in short, with dotage and imbecility.

All this, I grant, ought to be like dust in the balance, when put in competition with a *great* public good, when the accomplishment of it is apparent. But, as no problem is better defined in my

* As an analysis of this position, look to the pending election of Governor in Pennsylvania.

mind than that principle, not men is now, and will be, the object of contention; and that I could not obtain a *solitary* vote from that party; that any other respectable Federal character would receive the same suffrages that I should; that at my time of life (verging towards threescore and ten) I should expose myself, without rendering any essential service to my country, or answering the end contemplated; prudence on my part must arrest any attempt of the well-meant but mistaken views of my friends to introduce me again into the chair of government.

Lengthy as this letter is, I cannot conclude it without expressing an *earnest* wish that some intimate and confidential friend of the President's would give him to understand that his long absence from the seat of government, in the present critical conjuncture, affords matter for severe animadversion by the friends of government, who speak of it with much disapprobation; while the other party chuckle at and set it down as a favorable omen for themselves. It has been suggested to me to make this communication, but I have declined it, conceiving that it would be better received from a private character, more in the habits of social intercourse and friendship.

With the most sincere friendship and affectionate regard,

I am, always,

Your obedient servant,

G°. WASHINGTON.

His Excellency
JONATHAN TRUMBULL.

GENERAL WASHINGTON TO GOVERNOR TRUMBULL.

MOUNT VERNON, 30*th August*, 1799.

MY DEAR SIR, — Your favor of the 10th instant came duly to hand. It gave me pleasure to find, by the contents of it, that your sentiments respecting the comprehensive project of Colonel Trumbull coincided with those I had expressed to him.

A very different state of politics must obtain in this country, and more unanimity prevail in our public counsels, than is the case at present, ere such a measure could be undertaken with the least prospect of success. By unanimity *alone* the plan could be accomplished: — while, then, a party, and a strong one too, is hanging upon the wheels of government, opposing measures calculated

solely for internal defence, and is endeavoring to defeat all the laws which have been passed for this purpose, by rendering them obnoxious, to attempt anything beyond this, would be to encounter *certain* disappointment. And yet, if the policy of this country, or the necessity occasioned by the existing opposition to its measures, should suffer the French to possess themselves of Louisiana and the Floridas, either by exchange or otherwise, I will venture to predict, without the gift of "*second sight*," that there will be "no peace in Israel," — or, in other words, that the restless, ambitious, and intriguing spirit of that people will keep the United States in a continual state of warfare with the numerous tribes of Indians that inhabit our frontiers, for doing which their "diplomatic skill" is well adapted.

With respect to the other subject of your letter, I must again express a strong and ardent wish and desire that no eye, no tongue, no thought, may be turned towards me for the purpose alluded to therein. For, besides the reasons which I urged against the measure in my last, and which, in my judgment and by my feelings, are insurmountable, you yourself have furnished a cogent one.

You have conceded, what before was self-evident in my mind, namely, that not a single vote would thereby be drawn from the anti-Federal candidate. You add, however, that it might be a mean of uniting the Federal votes. Here, then, my dear sir, let me ask, what satisfaction, what consolation, what safety, should I find in support which depends upon caprice?

If *men*, not *principles*, can influence the choice on the part of the Federalists, what but fluctuations are to be expected? The favorite to-day may have the curtain dropped on him to-morrow, while steadiness marks the conduct of the Anti's; and whoever is not on *their* side must expect to be loaded with all the calumny that malice can invent; in addition to which I should be charged with inconsistency, concealed ambition, dotage, and a thousand more et ceteras.

It is too interesting not to be again repeated, that if principles, instead of men, are not the steady pursuit of the Federalists, their cause will soon be at an end; if these are pursued, they *will not divide* at the next election of a President; if they do divide on so *important* a point, it would be dangerous to trust them on any other,—and none except those who might be solicitous to fill the

chair of government would do it. In a word, my dear sir, I am too far advanced into the vale of life to bear such buffeting as I should meet with in such an event. A mind that has been constantly on the stretch since the year 1753, with but short intervals and little relaxation, requires rest and composure; and I believe that nothing short of a serious invasion of our country (in which case I conceive it to be the duty of every citizen to step forward in its defence) will ever draw me from my present retirement. But, let me be in that or in any other situation, I shall always remain,

Your sincere friend, and affectionate humble servant,

His Excellency GOVERNOR TRUMBULL. G°. WASHINGTON.

MARTHA WASHINGTON TO GOVERNOR TRUMBULL.*

MOUNT VERNON, *January* 15, 1800.

DEAR SIR, — When the mind is deeply affected by those irreparable losses which are incident to humanity, the good Christian will submit without repining to the dispensations of Divine Providence, and look for consolation to that Being who alone can pour balm into the bleeding heart, and who has promised to be the widow's God. But, in the severest trials, we find some alleviation to our grief in the sympathy of sincere friends; and I should not do justice to my sensibility, was I not to acknowledge that your kind letter of condolence of the 30th of December was grateful to my feeling. I well knew the affectionate regard which my dear deceased husband always entertained for you, and therefore conceive how afflicting his death must have been to you. The quotation which you have given of what was written to you on a former melancholy occasion, is truly applicable to this. The loss is ours; the gain is his.

For myself, I have only to bow with humble submission to the will of that God who giveth and who taketh away, looking forward with faith and hope to the moment when I shall be again united with the partner of my life. But, while I continue on earth, my prayers will be offered up for the welfare and happiness of my friends, among whom you will always be numbered, being,

Dear Sir,

Your sincere and afflicted friend,

MARTHA WASHINGTON.

* This letter was in response to a letter of condolence, written after the death of General Washington.

APPENDIX II.

LETTERS TO COLONEL JOHN TRUMBULL FROM LAFAYETTE, JOHN ADAMS, JEFFERSON, BENJAMIN WEST, AND LORD GRENVILLE.

FROM LAFAYETTE TO COLONEL TRUMBULL.*

PARIS, *January* 4, 1824.

MY DEAR SIR,—Words cannot sufficiently express how happy you have made me by your most valuable and no less welcome present. I received it in my usual family retirement at La Grange, and was delighted with many happy recollections it did produce, among which the pleasure of my friendly acquaintance with the painter had a very great share. I at once recognized all the portraits, and think you have been remarkably fortunate in hitting not only the features but the manners and deportment of the principal characters. It is so much the case, that my children, who, George excepted, were very young when they had a peep at John Adams, pointed out the father from their acquaintance with the son. Hancock, Charles Thompson, Jefferson, Franklin, Roger Sherman, &c., &c., suddenly appeared to me in the grand act which has begun the era of national freedom and self-government. I hailed the banner under which I enlisted in my youth, and shall die in old age; and I bless the great artist, the good fellow-citizen and soldier to whom I was obliged for so many lively, affectionate, and patriotic sensations.

It is to me also an inexpressible gratification to think your admirable pencil has fixed me on the grand central rotunda of the capitol of the United States, in the situation where I like myself best, namely, in my American regimentals, under our Republican continental colors, at the head of my beloved, gallant, affectionate light infantry, at the successful close of the Virginia campaign. I cannot promise you my actual features would do justice to your portrait of that time; but the heart is the same.

* In acknowledgment of the present of a copy of the engraving of Trumbull's picture of the Declaration of Independence.—F.

The account you give of the great water communication through those countries which I saw, for the most part, a wilderness, while I acted as commander in the Northern Department, is truly enchanting. In those wonders of freedom, national sense, and unshackled industry, my mind seeks a refuge from too many disgusts and disappointments on this side of the Atlantic. Let us not, however, despair of European liberty, much less range among those who create discouragement by proclaiming it; but let it be also the fundamental rule of the American Republics to beware of any sort of European influence, whether hostile or friendly, — the pretended benevolence of the British government having of late been as much if not more fatal to Italy, the Peninsula, and by and by, probably, to Greece, than all the violence of the pretended holy alliance of a gang of continental monarchs and aristocrats. Amidst so much despotism, privilege, corruption, perfidy, and servility, the message of the President has suddenly appeared as an admirable mass of light to show to the nations of Europe what is a free people, and a popular magistrate. Receive my most affectionate thanks, good wishes, and regards, and believe me, forever,

Your sincere constant friend,

LAFAYETTE.

JOHN ADAMS TO COLONEL TRUMBULL.

QUINCY, *January* 1, 1817.

MY DEAR SIR, —Your kind letter of the 26th of December has given me more pleasure than it would be prudent or decent for me to express.

Your design has my cordial approbation and best wishes. But you will please to remember that the burin and the pencil, the chisel and the trowel, have in all ages and countries, of which we have any information, been enlisted on the side of despotism and superstition. I should have said, of superstition and despotism, for superstition is the first and universal cause of despotism.

Characters and counsels and actions, merely social, merely civil, merely political, merely moral, are always neglected and forgotten.

Architecture, sculpture, painting, and poetry, have conspired against the rights of mankind; and the Protestant religion is now unpopular and odious, because it is not friendly to the fine arts.

I am not, however, a disciple of Rousseau. Your country ought

to acknowledge itself more indebted to you than to any other artist who ever existed; and I therefore heartily wish you success.

But I must beg pardon of my country when I say, that I see no disposition to celebrate or remember, or even curiosity to inquire into the characters, actions, or events, of the Revolution.

I am, therefore, more inclined to despair than to hope for your success in Gongress, though I wish it with all my heart.

I should be glad to be informed of your progress, being, with sincere esteem and real affection,

Your friend,

COL. TRUMBULL. JOHN ADAMS.

JOHN ADAMS TO COLONEL TRUMBULL.

QUINCY, *March* 18, 1817.

DEAR SIR, — I thank you for your favor of the 3d, and congratulate you on your success, which I hope and believe will be an honorable and noble establishment, though it may not be so lucrative as I wish it, for life.

There is a coincidence of circumstances which affects me very sensibly. A son of Governor Trumbull so meritorious and so conspicuous a character in the Revolution, an officer of rank and merit in the Revolutionary army, a painter of Warren and Montgomery, is now destined to transmit to posterity some of its most celebrated military events; one only merely political.

The dimensions, eighteen by twelve, appear vast: though I never passed through Antwerp without gazing at all the paintings of Rubens, I cannot depend upon my memory to say that even his "Descent from the Cross," or his "Apotheosis of the Virgin," exceed these measures.

I have been informed that one of the greatest talents of a painter, is a capacity to comprehend a large space, and to proportion all his figures to it.

Truth, nature, fact, should be your sole guide. Let not our posterity be deluded by fictions under pretence of poetical or graphical licenses.

Now sir, as I have taken the liberty of friendship to preach to you, I ask your indulgence for a question or two.

Who of your profession will undertake to paint a debate or an argument? Discussions in the legislature we call debates; the disputes in the tribunals of justice we call arguments.

Who will paint the argument in the council chambers in Boston, in the month of February, 1761, between Mr. Gridley and Mr. Otis, upon the question of Writs of Assistants? I dare not draw the characters of Gridley or Otis. The latter, as if he had been inspired with a spirit of prophecy, laid open to the view of a crowded audience all that has since happened in America. Here the Revolution commenced. Then and there the child was born.

Who will paint Samuel Adams at the head of ten thousand freemen and volunteers, with his quivering paralytic hands in the council chamber shaking the souls of Hutchinson and Dalrymple, and driving down to the Castle the two offending regiments, which Lord North ever afterwards called "Sam Adams's two regiments"?

I have known enough of your discretion to believe it unnecessary to caution you to consider this letter as confidential from

Your friend,

JOHN TRUMBULL, Esq. JOHN ADAMS.

THOMAS JEFFERSON TO COLONEL TRUMBULL.

MONTICELLO, *January* 10, 1817.

DEAR SIR, — Our last mail brought me your favor of December 26. The lapse of twenty-eight years which you count since our first intimacies has diminished in nothing my affection for you. We learn, as we grow old, to value early friendships, because the new-made do not fit us so closely. It is an age since I have heard of Mrs. Church. Yet her place in my bosom is as warm as ever; and so is Kitty's. I think I learned from some quarter that Mrs. Cosway was retired to a religious house somewhere. And Madame de Corny, what is become of her? Is she living or dead? Thus you see how your letter calls up recollections of our charming *coterie* of Paris, now scattered and estranged, but not so in either my memory or affection. It has made me forget, too, that the torpitude of age, with a stiffening wrist, (the effect of its Paris dislocation,) warns me to write letters seldom and short. To the object of yours, therefore. You think you need a borrowed patronage at Washington. No, my dear sir, your own reputation, your talent, known to all, is a patronage with all; to which any addition offered would be impertinent, if you did not ask it; and mine especially is now obsolete. The turns of the magic lanthern have shifted all the figures; and those it now presents are strangers to

me. Merely to show you my willingness, however; I inclose you a letter to Colonel Monroe, who, without it, would do everything he could for you, and with it not the less. His warm heart infuses zeal into all his good offices. I give it to him the rather, also, because he will be in place when you will need them. Mr. Madison will be away, and it would be useless to add to the labors of his letter-reading; and I know, moreover, his opinions and dispositions towards you to be as favorable as can be wished. I rejoice that the works you have so long contemplated are likely to come to light. If the legislature, to the reëdification of the public buildings, will take up with spirit their decoration also, yours must be the first object of their attentions.

I hope they will do it, and honor themselves, their country, and yourself, by preserving these monuments of our Revolutionary achievements.

My daughter, whom you knew an infant, has, with her family, given me a dozen associates at our daily table. She is well, and remembers all her friends affectionately. I am, as I ever have been,

Sincerely yours,

COLONEL TRUMBULL. TH: JEFFERSON.

BENJAMIN WEST TO COLONEL TRUMBULL.

DEAR SIR, — The letter you favored me with on your arrival at New York, did not come to hand till three months and one day after the date, and then brought by the penny-post, and not by the gentleman whom it was meant to introduce to a sight of my paintings.

The favorable opportunity by my nephew, John Clarkson, returning to Philadelphia, I could not permit to pass without giving you this letter, and some account of the arts and artists here.

Mr. Sharp is attentive to the plate from your picture of Gibraltar, and promises to be successful in that production.

The "Chatham," by Bartolozzi, is not yet ready, Copley finding some points not to his satisfaction. Bartolozzi has just finished a large print from my picture of St. Paul, at Greenwich, in a style much to my satisfaction, being a mixture of etching and engraving united, and forms a print exactly answering to my finished sketches in painting.

Sir Joshua Reynolds, through the misfortune of being deprived

of the sight of one of his eyes, has dropped the pencil, and, in all probability, the transcending powers of young Lawrence, in portrait painting, will be the man to succeed him in that department of art. My son, Raphael, with his brother, has returned from Switzerland; he has brought a rich portfolio of sketches from the grand features of that country, and is just on the point of finishing a larger picture from Shakspeare's "Tempest." The moment is, where the ship is cast on shore, and Trinculo finds Caliban, through fear, lying on the ground. I believe there is not a picture to be found where the elements are so masterly brought together, and more imagination shown than in this picture.

My pencil is now proceeding with the pictures of the great design of his Majesty's Chapel, in Windsor Castle. I have executed several of the large pictures for it since you left this country, besides a large cartoon to paint from on glass, for a window in the Collegiate Church at Windsor, and a finished sketch for my next great picture for Alderman Boydell's Shakspeare Gallery; the subject is "Ophelia in Madness before the King and Queen." The many that have seen it are pleased to compliment me on its success. I have made another sketch which is for Macklin's Gallery, from which a print is to be made for his Bible; the subject is, "Christ showing a Little Child as the Emblem of Heaven."

But of all the artists that have attained the power of giving life to their productions, it is Mrs. Cosway; for the beginning of last June, she produced a living child of the feminine gender, and before six weeks were at an end, she took her departure for Rome, and left Cosway to nurse the child. . . . . .

If this hasty scribble can afford you any entertainment, I shall be happy; as for any other news, the general accounts will inform you this country thinks of nothing else but fighting the Spaniards.

Mr. Poggi is again in Holland; Mrs. Poggi and her children are well. Mrs. B—— is at Fulham with her friend, Mrs. King, who had the misfortune to have her only son killed in a duel, ten days past, at Margate.

Mrs. West and my sons are well; they desire to be remembered to you.

I am, dear sir,

Your obedient servant,

BENJAMIN WEST.

LONDON, *October* 14, 1790.

My nephew, John Clarkson, will show you the print of St. Paul, from the picture at Greenwich.

To Mr. Trumbull.

BENJAMIN WEST TO COLONEL TRUMBULL.

London, *February* 6, 1805.

Dear Sir, — Mr. Calton moving with his family to New York, I embrace the opportunity by him to give this letter the chance of finding you there. Mrs. West, myself, and all the Poggies, with many of your other friends, are apprehensive that some misfortune has befallen you or Mrs. Trumbull, that has occasioned none of us hearing from you since your departure from England. Speaking of the Poggies, I have to inform you that Mr. Poggi is now with his family; he returned to them through Holland in October last. They are well, and are distressed in not hearing from Mrs. Trumbull, as are likewise Mrs. West and myself, for we want to know how the climate of America, etc., agrees with her.

Our politics, as a fighting, money-making people, go on much as when you left us last year: it is a stream which overwhelms everything else. The fine arts are but little thought of in our military dash, except by his Majesty (who, thank God, is in perfect good health, as I witnessed some days past, when I was with him in Windsor Castle for several hours), who at present is forming in that Castle a collection, made from all his other palaces, of the best pictures they contained; the Queen's house is utterly stripped, so are Kensington and Hampton Court; but his Majesty, not to deprive Mr. Holloway of the opportunity of finishing his engravings from the Cartoons, has sent them to their old station at Hampton Court, there to remain till he (Holloway) has finished them. His Majesty resides in the Castle, and told me that he now felt himself at home, — where, I say, may he long continue. He has recently, by a single act, placed all those vipers (who have been endeavoring to sting and drive me from the Chair of the Royal Academy for some years past) under my feet. The fact was simply as follows: — On the 10th of December last, — the time for electing the President and the other officers for the ensuing year, — Mr. Trisham rose and addressed the general assembly — viz., that they were then to make choice of a proper person

to fill the Chair of that Institution; and, as the present President *had not done his duty as President, and had lost his Majesty's confidence*, it would be highly improper to reëlect him; and as it was proper that one should fill the Chair who had his Majesty's confidence, Mr. Wyatt was that person. He therefore proposed Mr. Wyatt to the general assembly to be elected as their future President. He was supported in this by Sir Francis Bourgeoise, Sir William Beachey, Mr. Copley, Cosway, Yenn, and others. Mr. Trisham — to give more force to what he had advanced respecting the President having lost his Majesty's confidence — informed the general assembly that he would substantiate its truth, or he should hold himself the most contemptible of all beings, unworthy of a seat in that Academy, and deserving the contempt of all its members; and then informed them that Mr. Yenn had a message from his Majesty, which he was commanded to deliver there to that purpose; this threw the general assembly into great agitation, and most of the members called on Mr. Yenn to inform them what *were the commands he bore from his Majesty*; but Mr. Yenn not rising, I then addressed him, by saying, that if he bore a message from his Majesty, I would answer for myself, and for most of the members, that his Majesty's message would be received by them with the most profound respect and attention. He therefore had but to make it known. The general assembly repeated my words, which brought up Mr. Yenn with much agitation, when he declared that he had no message from his Majesty; the King had not commanded him to deliver anything respecting the elections that night. The speeches which followed that declaration of Mr. Yenn you may easily imagine, for most of the members were on their feet at once. The election was called for, and I was reëlected President, — twenty for me, and seven for Wyatt, and three blanks, — supposed to be some of Mr. Wyatt's party, who took the alarm when they found that Mr. Yenn had no message. As all elections must be confirmed by his Majesty, some of the party was so bold as to say that although the election was carried in my favor, the King would not sustain it — I should then know his Majesty's displeasure when I went with the election to him for his signature. A few days after, it became my duty to wait on his Majesty with the papers containing the several elections for his examination and signature. His Majesty was in Windsor Castle, and, when I came into his presence, he received me more as a brother and friend than as one

who had lost his confidence. The elections received his full approbation and signature after which he was graciously pleased to hold me in his confidence for three hours and a half. Thus armed with his signature to my election, and his full confidence, as well as his signature to the election of Mr. Fuseli as Keeper of the Royal Academy, whom the same party had opposed by placing Mr. Rigouad against him, with a declaration that his Majesty would have no one for Keeper but Mr. Rigouad, and would not sanction any other person; but in this their calculations were as false as in that of mine, as the King highly approved the choice the Academy had made in selecting Mr. Fuseli to the place of Keeper.

A few days after I returned from Windsor, I ordered the Secretary, to summon a general assembly, to receive his Majesty's decisions on the elections of President and Keeper of the Royal Academy: this ambiguous word brought the whole parties to know what had been his Majesty's will.

I opened the business to the general assembly by a short account of the gracious manner in which I had been received by the King, — both as President and as Mr. West, — and then laid the papers of the elections, with the royal signatures to them, on the table. I must confess I never saw an opposition so crushed, or a majority act with more becoming moderation and dignity, on any occasion, than on that; and observing a disposition in some of the members to move for censure being made on some of the most active in the opposition, I declaimed against any such acts; that it was my wish not a minute should be entered on our books; that an event so disgraceful should not be recorded: my triumph, and the triumph of my friends, was the King's signatures on the table. Let those who had informed the general assembly that I had lost the King's confidence retire unnoticed — and leave them to their own thoughts; and I then recommended the prosperity of the arts and the Institution, and that if any other person's being in the Chair would contribute more to their prosperity, I would wait on his Majesty to relinquish it to that person, and give him and the arts my support as long as I was able. Mr. Farrington, Mr. Lawrence, Flaxman, Nollikins, Hoppenor, Shee, Banks, and all the professional strength of the Academy, spoke on the occasion, and handsomely touched on my being one of the four, and the only surviving one, that founded the Academy, under his present Majesty; and took an extended view of my

professional character, tendering me their thanks for the support I had ever given to that Institution and the arts in England. By the short sketch I have given of what had passed in the Academy, you will see that the Institution is in the hands of his Majesty and myself and friends.

With respect to other particulars in the arts, I have to inform you that Alderman Boydell is dead, and that the Shakspeare Gallery has been decided by lottery, and it has fallen to the lot of Mr. Tassee, of Lester-Fields (the maker of gems), and that poor Banks, the sculptor, now lies dead.

In regard to myself and family, — Mrs. West continues much the same as when you left us. My eldest son, his wife, and little girl, are well. My youngest son, his wife, and little Benjamin the Ruler, are likewise well. In regard to myself, I have just come through a bad cold, but have escaped the gout; and am on the fourth division of the great window for Forrest to work the glass after.

From what passed between Mr. Livingston and me when he was in London from Paris, I had flattered myself he would, on his return to France, have honored me with the means of becoming a member of the New York Academy; but I do suppose the press of business he had on leaving that city prevented his doing it. Should you see him, I beg you will present my respects to him.

It will be a gratification to me to hear from you how the arts are likely to be protected in America; it will be in its power to do great things with respect to the arts, and this is the moment for it to start, as the higher excellences in them are past their zenith on this side of the water, and the advantage which Italy, France, Flanders, Holland, and England recently received by cherishing them, — those advantages may be embraced by America, both for her honor and riches, as the whole world will lie open to her commerce. *Her youths have the fire of genius, and her men have the thinking of philosophers!* It is the combination of those qualities which have rendered the Greeks' name eternal in all that was refined in the higher excellence of art; and in my opinion there has not existed a people so likely to be their rivals as the Americans.

With great esteem and friendship, I have the honor to be,

Dear Sir,

Your most obedient and obliged,

BENJAMIN WEST.

P. S. — Since writing the above this morning, Mrs. West has informed me that she received Mrs. Trumbull's letter, dated New York, January 2. It has given Mrs. West and myself much pleasure to find you are well. Make my love to her, and, when you have an opportunity, let me hear from you. If you are in the way of seeing Mr. Jay and Mr. King, I beg you to present my respects to them, and say that a great man with us often inquires after their health. I beg also to be remembered to Mr. Murray, Jun., and to Mr. Archibald Robinson. I have not forgot the cast of the anatomy figure which we have in the Royal Academy.

It will be sent to the Academy at New York in the course of next summer.

Haste prevents me from copying this letter; you will therefore excuse its incorrectness.

JOHN TRUMBULL, Esq.

LORD GRENVILLE TO COLONEL TRUMBULL.

November 23, 1814.

SIR, — No apology whatever could be necessary for your letter, conveying information on a subject in which I take so deep an interest. Among the circumstances to which I look back with most pleasure in the close of a long, and I hope not wholly useless, public life, is that of the uniform, though frequently ineffectual, efforts which I have made for the maintenance of peace and of friendship between my own country and the United States. How much the conduct of both governments has contributed to disappoint those wishes, I need not say to a person as well informed on the subject as you are.

Lamenting deeply the existence and continuance of the war, I felt additional grief when I saw it assuming a shape of unusual and revolting ferocity, unnecessarily aggravating the public and general evils of such a state by the wanton infliction of private and individual calamity. To do all in his power to check the progress of such a system, seems to me the duty of every man, and I took the very first opportunity of expressing my abhorrence of it, (on whatever side it originated,) and of calling for official measures to prevent its continuance. Had this claim been resisted, I was prepared and resolved to pursue the subject further. Nor did I desist from that intention until I received public and

solemn assurances that orders had already been sent out to America for the discontinuance of such measures, and for a return to the practice of modern and civilized war, provided the same course shall in future be adhered to by those whom I lament to call our enemies.

This was the only practical result that could be hoped for from pursuing the subject further. An inquiry, which party first resorted to practices which both equally disclaim in principle, and justify only on the ground of retaliation, could now only produce fruitless recriminations, tending more to irritation than to peace. I therefore let the matter rest there, but with the full purpose of renewing it, should the expectations now held out be ultimately disappointed.

I am, with great truth and regard, sir,

Your most faithful humble servant,

GRENVILLE.

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